Hall.

AMERICAN ANNALS

OF

The Deaf,

EDITED BY

EDWARD ALLEN FAY,

UNDER THE DIRECTION OF

R. O. JOHNSON, OF INDIANA, F. D. CLARKE, OF MICHIGAN, J. H. JOHNSON, OF ALABAMA, A. L. E. CROUTER, OF PENNSYLVANIA, AND J. W. JONES, OF OHIO,

Committee of the Conference of Superintendents and Principals of American Schools for the Deaf.

VOL. LIV, No. 2.

MARCH, 1909.

WASHINGTON, D. C.

PRINTED BY GIBSON BROTHERS.

Entered at the Post Office at Washington, D. C., as Second-class under the Act of July 16, 1894.

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The AMERICAN ANNALS OF THE DEAF is published bi-monthly during the school year, appearing in the months of January, March, May, September, and November. The subscription price is $2.00 a year, payable in advance; single numbers 50 cents. For Great Britain and Ireland the subscription price, postage included, is 8s. 6d.; for Germany, 8½ marks; for France, 21 francs, all which may be sent through the postal money-order office. Subscriptions and all other communications relating to the *Annals* should be addressed to the Editor,

E. A. FAY,

Gallaudet College, Kendall Green,

WASHINGTON, D. C.

AMERICAN ANNALS OF THE DEAF.

VOL. LIV, NO. 2.

MARCH, 1909.

THE SOUND-MEMORIES OF A SEMI-MUTE.

(A Bit of Autobiography.)

MY own experience has made it a frequent subject of speculation with me to what extent the so-called "semi-mutes" retain a true conception of the various manifestations of sound, with which the normal ear is as familiar as the normal eye with the manifestations of light in the form of shape and color.

The "semi-mutes" I have in mind are deaf persons who have not only lost their hearing *after* they had acquired language through the normal channel, the ear, but had also learned to read and write, that is, were not less than seven years old when they became deaf.

To such "semi-mutes" language is always a thing of *sound*. They always mentally *sound* their verbal expressions whether in speech or in the process of thought or in writing or in manual spelling.

I do not include in this classification persons who, though they had acquired speech, became deaf before they had learned to read and write; for, beyond question, this knowledge, when acquired before hearing is lost and afterwards made use of, is the most powerful agent imaginable for preserving and extending the knowledge of the language possessed when deafness occurred. It also goes without saying that the more advanced the age at which hearing

is lost, the greater will have been the acquaintance with the world of sound, and the more fixed the impressions, and the more correct and stronger the subsequent memory of speech, of the voices of nature, and of music.

Obviously the strength of the auditory memory differs with each individual, even where deafness occurred at the same age, some possessing a clear-cut recollection of speech and sounds, while in others it has been almost obliterated.

The writer belongs to the latter class. He lost his hearing at the age of eight years and nine months, after having attended school nearly three years, and just as he was entering into that receptive stage of life when the ear and tongue become the true channel of thought expression.

His linguistic environment was also peculiar. The language used at home with his parents and the elders of the family was invariably Plattdeutsch, the German of the Northern lowlands, which, though it has no distinctive literature of its own, in the sense that the spelling and the grammar are fixed, he later learned to read and enjoy in the writings of Fritz Reuter and Luise Westkirch. The cradle songs and lullabies that still linger in his memory, and which he has never seen in print, are all in this dialect; but it is a word-memory only, the recollection of the *voices* that sang them having passed away forever with his hearing and the voices themselves.

In the streets, with his playmates and schoolfellows, the language used was always English. He cannot recall a single occasion, either before or after deafness, when he spoke with his sisters, in the household or out, in any language but English. His correspondence with his parents, carried on weekly and extending over a period of twenty-four years until their death, was without a single exception in German; that with his sisters, extending to the present time, as invariably in English, though they were equally conversant with German.

In church and Sunday School, finally, the medium employed was German; in school it was alternately German and English.

The result of this mixed linguistic environment was that he became a sort of triple polyglot. The limited vocabulary in each tongue he acquired before deafness he believes he retains in its purity, as far as pronunciation is concerned, but the accessions that came later, as he grew older and acquired a wider range of expression, suffered in this particular as he unconsciously began to transfer linguistic peculiarities from one tongue to the other.

Thus it is well-known that German lacks the English sound of *th*, which accounts for the difficulty of our transplanted and Americanized Teutons in pronouncing properly such words as *they*, *this*, *that*, they generally saying *dey*, *dis*, *dat*, and so on.

After becoming deaf the writer discontinued the *vocal* use of German almost entirely, there being few or none with whom he cared to employ it, but for all that he became an omnivorous reader, taking kindly to Schiller, Lessing, Uhland, Zschokke, Hackländer, Freytag, and such other books as he found on his father's shelves, and above all to the semi-monthly *Gartenlaube*, which he has now read continuously for almost forty years. Before he knew it, and before the habit could be discovered and checked by the tutor later employed by his parents, he found he had endowed spoken German with the English sound of *th*, saying, for instance, *Th*or instead of T(h)or, *The*ater instead of T(h)eater, *Th*eodor instead of T(h)eodor, *Th*üringen instead of T(h)üringen, and so on.

But, to reciprocate, the German diphthong *au* is identical in sound with the English *ou*, as Maus = mouse, Haus = house, laut = loud, etc., and the writer has never been quite able to break the habit formed in the first years after his deafness of pronouncing the English *au* like the

German *ou*. Thus to this day he persists in mentally pronouncing Maud, M*ou*d; applause, appl*ou*se; cauliflower, c*ou*liflower; Gallaudet, Gall*ou*det, etc., though he knows it is erroneous and likely to provoke a smile.

But a few such words, like *because*, he has always pronounced correctly, bec*au*se they form part of the original stock lugged into his vocabulary by the ears.

Of course there were and are other and doubtless many solecisms in his pronunciation of which he is not aware, and under the circumstances, as he grew older and his choice of expressions more extensive, he became rather shy of using speech except with relatives and friends who had become used to his peculiarities.

It is self-evident that had he known and used but one language, English, this confusion of tongues would never have occurred, and he would have been more frequent and confident in his use of speech. Nevertheless, he would much rather have his present knowledge of German and Platt and the pleasure it has brought him than be without it at the price of a slightly better pronunciation and facility in using speech.

With strangers he preferred to use writing, as here he could *see* what he was saying and was on safe ground. Nor was this all. There was a constantly increasing hesitation in the choice of words to express his meaning in speech, while when it came to writing there was no such difficulty. There was in speaking an unconscious transposition of words, and not infrequent ellipses, so that he had often to correct himself or repeat his remarks in order to be sure of being understood. This tendency seems to be increasing, though he uses speech more and comes more into contact with the hearing than at any time since he began to associate with the deaf thirty-three years ago.

But by far the greatest loss that followed in the wake of deafness has been the almost total obliteration from

his memory of the multifarious voices of nature, of harmony, and of music. So far as these are concerned he lives in a world of silence, and the only harmonious memories left him are those he finds in verbal language, whether English or German or Plattdeutsch, or French or Latin, which last two he pronounces to his inner ear exactly as the pronunciation would be according to the spelling in English.

When yet a child he was supposed to have a latent, that is, a good ear for music, and the Christmas before he became deaf, among other things which the *Christkindchen* brought him from his grandmother in far-away Hanover, was a violin. It did not bear the hall-mark of Stradivarius, or Amati, or even of Cremona, but it was a good one, and certainly good enough for a boy of eight. At the same time he became possessor of an old banjo in fine condition, one that had been thrummed to many a plantation melody and which he had time and again heard furnish the accompaniment to the songs of a circle of liberated slaves; for it was just after the war and Baltimore was on the border line.

But, alas! The music of that violin as well as the notes of the old banjo have forever passed from his memory. Of the songs tuned to the latter he can recall only one, "Star of the Twilight," and he has a hazy recollection of "Way down on the Suwanee River." But while the memory of the *music* has perished the *scenic* setting is still vivid in his mind. The owner of the banjo, Bob, a light-colored mulatto; Bill, a big, pock-marked, coal-black Senegambian; Jacob, a short, squat, grey-bearded, grey-headed, pleasant-faced negro, who among other accomplishments could speak German, and spoke it well, and who at all seasons of the year had a pocket full of pears dried whole, skin and all, for us boys; Little Joe, a diminutive, sawed-off specimen, all of whom joined with others

in these songs—the writer can see them in his mind's eye and in their habit as they lived. The point he wishes to emphasize is that while the visual memory is active and well-preserved, that of sound has vanished.

Even his mother's voice has left no lodgement in his memory, and still less his father's or that of any of his playmates. In fact the only voice he does remember is that of Rev. Dr. Scheib, the principal of Zion School in Baltimore, perhaps the best German-English school of that day in the whole country, which numbered at the time he was enrolled over twelve hundred pupils. And Dr. Scheib's voice he remembers only because he spoke on one occasion to an idler in the class in a tone in which anger, disgust, and reproof shrilled through bone and marrow and made the rest of the youngsters bless their stars they were not included in this *anathema maranatha.* Even here the visual memory is far more vivid. He can recall the class-room with its embellishment of lithographs illustrating natural history; the kindly old teacher, Mr. Wiegand; Dr. Scheib in his black clothes, and with his white hair and whiter mustache, his clean-cut features alive with indignation; and the cringing culprit, brown-eyed and olive-skinned, clad in velvet knickerbockers and velvet jacket.

The only musical sound he can remember is the Easter chime of the bells of St. Emanuel's church in Baltimore, since destroyed in the great fire. The wild, joyous clangor of these bells, seeming to mount and mount up till it pierced the sky, still rings in his ear and, though he did not understand the melody then, he fancies it must have been like the accompaniment to the Easter choir in *Faust:*

Christ is arisen
Out of corruption's tomb;
Burst ye your prison,
Break from your gloom!
Praising and pleading him,
Lovingly needing him,
Brotherly feeding him,
Preaching and speeding him,
Joy is his promise clear,
For *you* is the Master near,
For *you* is he here!

No other bells have replaced those chimes of St. Emanuel's to the writer's inner ear. He has often had his hand on and *felt* the deep boom of the city-hall bell of Baltimore, has himself struck chimes in some other church than St. Emanuel's, has jangled strings of sleigh-bells, has rung hand-bells, but he could only *feel* the vibrations. Sound as *sound* was dead to him.

He has had far greater pleasure from Schiller's *Song of the Bell* or Poe's *The Bells*—each perhaps the finest specimen extant of sound lending itself to the sense, the one in German, the other in English—with their clangor, their tintinnabulation, their wild alarum, their pathos, their merriment; but here the pleasure is in the melody of the language and the visual imagery it conjures up.

He has forgotten practically all other sounds. The roar, or the sigh, or the whisper of the wind has become a mere phrase; so has the cadence of running waters or the murmur of the waves, such as he heard in the brooks around Baltimore, or on Chesapeake Bay; the patter of the rain on the roof, the soughing of the trees, are visual pictures framed in silence. He has owned dogs nearly all his life, and all his life has had feathered pets, but cannot recall what a canine bark should sound like, nor the trill of a canary, nor the crowing of a cock, and is undecided whether his pigeons used to say "*coo*" in English or "*gurr*" in German.

The same, as has been pointed out, is the case with instrumental music. The blare of the band has degenerated into a visual strutting drum-major with his baton, and the rhythmic march of men with puffed cheeks blowing wind into fifes, trombones, and horns; piano-playing has become a mere thrumming of ivory and ebony keys, while the most pleasing violinist he can recall, and whom he ranks as an artist above Paganini and Sarasate, is the fiddler whom Dickens describes in his Christmas Carol and who "tuned like fifty stomach aches."

It is incomprehensible to him how an orchestra leader, directing the combined harmony of fifty varied instruments, can detect a single false note or discord, and single out and reprimand the offender, in the same way, perhaps, as a martinet colonel can see a foot or knee or elbow out of line in the dress parade of some crack regiment.

For all these reasons those passages in literature that have been most tantalizing to me are those that *describe* music or melody, as, for instance, Hippolyta's description of the pack of Spartan hounds in *A Midsummer Night's Dream:*

> I was with Hercules and Cadmus once,
> When in a wood of Crete they bay'd the bear
> With hounds of Sparta: Never did I hear
> Such gallant chiding; for besides the groves,
> The skies, the fountains, every region near
> Seemed all one mutual cry. I never heard
> So musical a discord, such sweet thunder.

And, again, Theseus's answering description:

> My hounds are bred out of the Spartan kind,
> So flew'd, so sanded, and their heads are hung
> With ears that sweep away the morning dew;
> Crook-kneed and dew-lapped like Thessalian bulls;
> Slow in pursuit, *but matched in mouth like bells*
> *Each under each.* A cry more tunable
> Was never holla'd to, nor cheered with horn.

No hunting dogs have ever had a finer word picture. I can *see* them sweeping by and the hunters hiking after with their view-halloa, but the *baying* of these hounds, *matched like a chime of bells,* ah, there's the rub for me! There were pleasures in the hunt aside from the mere gallop, the following of the hounds, the lust to kill, the being in at the death, that appealed to the esthetic ear alone, and which must forever be beyond my comprehension.

Or, again, the opening lines in *Twelfth Night:*

> That strain again! It had a dying fall.
> Oh, it came o'er my ear like the sweet sound
> That breathes upon a bank of violets,
> Stealing and giving odor! Enough; no more:
> 'Tis not so sweet now as it was before.

How can one who has forgotten sound, or never known what it is, catch the full auditory imagery of such a passage as the following from Tennyson's *Mariana?*

> All day within the dreamy house
> The doors upon their hinges creaked;
> The blue fly sung i' the pane; the mouse
> Behind the mouldering wainscot shriek'd.
> * * *
> The sparrow's chirrup on the roof,
> The slow clock ticking, and the sound
> Which to the wooing wind aloof
> The poplar made, did all confound
> The sense.

Alas! the deaf have lost much. If the eye is the window, the ear is certainly the gateway of the soul, and to have this gateway overgrown with cobwebs, no longer to know the human voice divine, or the myriad calls of animate and inanimate nature, of music or melody, is in its way as great a deprivation as inability to apprehend speech and all it means through its natural and normal channel.

This almost utter aphasia of sound in the case of the

writer may be extreme and unique, but it is logical to assume that all "semi-mutes" are more or less so affected. With the sole exception of language, the writer's sound-memory has become entirely visualized, and sound as sound no longer exists for him. Blessed, indeed, are those who when they see some wild bird can recall its note; or can connect its booming with the glimpse of a beetle, or can mentally hear the roar of the wind, or the fall of the rain, or the harmony of a violin, or the melody of some sweet song, or all the myriad forms in which sound manifests itself and for whose reception the Creator destined the ear.

GEORGE WILLIAM VEDITZ.

Colorado Springs, Colorado.

THE IMPORTANCE OF VOICE CULTURE IN TEACHING THE DEAF.*

I HAVE always had a profound admiration and respect for the very remarkable work accomplished by the teachers of the deaf. It is one of the modern miracles—a miracle of patience and ingenuity! Truly, those who give their time and skill to instruct this sorely afflicted class, till those who erstwhile were dumb are linked by speech to speaking humanity—those who perform this miracle have done no small share in the world's work.

It is like the work of the coral insect under the sea—adding atom to atom, atom to atom, till an island emerges above the waste of waters. In like manner the teacher of the deaf child, through weeks and months and years of unremitting effort, builds in the silent throat letter upon letter, syllable upon syllable, word upon word, sentence upon sentence, till speech blossoms upon the child's lips,

*An address delivered before the Teachers' Association of the Pennsylvania Institution, Mt. Airy, Philadelphia.

as land upon the sea, and he becomes an active member of the great world that must else have ignored him.

Surely such teachers can have nothing to learn from the coral builder—they seem, indeed, to have much in common. But one point in the building of coral reefs, which may be a virtue in the insect, is *not* a virtue in the teacher. It is this: every atom of added material in the reef or island means to the insect the sacrifice of its own life.

Too many teachers thus sacrifice, bit by bit, the life that years of experience make more and more valuable to the world. They expend to the limit the life forces that they should zealously hoard.

How many teachers leave the class-room at the end of the day, sick with fatigue and exhaustion? How many teachers begin each day with a baffling consciousness of insufficient strength for the task that must fill it? And *such* a task! One that needs all the freshness of mind and body—all the reserve physical force that one can summon and command!

A certain amount of fatigue is inevitable in this perhaps the most difficult of all teaching, but it should not go, ordinarily, beyond the capacity of the teacher to recuperate in the hours of sleep and recreation. That a large amount of such fatigue is quite unnecessary is true beyond a doubt.

Two remedies suggest themselves to lighten the heavy task: first, to remove all unnecessary physical and nervous strain from the teacher; and, second, to make the pupil more pliable, more amenable to the teacher's efforts in his behalf.

There may be, perhaps, other ways of accomplishing this; but none commend themselves more strongly to those who trouble to look into the matter than well-based voice culture for both teacher and pupil.

Nineteen out of twenty teachers (to speak conservatively) add unnecessary fatigue to their labors by the inexact

and unskilful use of the vocal muscles. This is easily to be remedied by the scientific adjustment and training of these muscles. Again, on the other hand, they allow extrinsic, *non-vocal* muscles to be involved in speaking. These extrinsic non-vocal muscles have, normally, nothing to do with the production of tone; but, wrongly used, they have much to do with the *restriction* of tone, whether in speaking or singing. Naturally there ensues an extra tension on the part of the legitimate vocal muscles, and this strain, hour after hour, undoubtedly tends to exhaustion, both muscularly and nervously.

It is, for instance, as if one should try to teach while holding the hands tightly clenched. The strain would be perfectly obvious, in this case, and the resulting fatigue easily traced to its proper source. But simply because the muscles held rigidly useless, and worse than useless, are in the throat, neck, and trunk, people fail to connect such misuse with its far-reaching effects or, partially tracing it, vainly lament their possession of "a weak throat."

"A weak throat!" The very phrase suggests the remedy! In these days of physical culture, the cure for weak ankles, weak chest, weak shoulders, weak arms and fingers, is in every case the same: discriminating muscular education; exercise, properly applied. And, since there is nothing occult about the throat and its function the voice, a weak throat is amenable to the same cure as a weak finger—discriminating exercise; an adequate amount, wisely directed, and well applied. The synonym for this is voice culture.

In all muscular action, certain definite chemical and mechanical changes take place in the body. Even the lifting of a finger involves three distinct processes: first, combustion, that destroys vital cells to provide motive power; second, widespread systemic action to remove the

used cells; third, the stimulation of nutrition to restore the waste by the substitution of new, live cells.

Suppose every time we needed merely to lift a finger, we raised the entire arm as well; and not only raised it, but held it rigidly aloft. Can you not readily see that we should destroy more vital cells than the original requirement demanded; giving the body more dead cells to excrete, more new cells to create?

We see at once that such excess action would be anything but economical. It would call upon the executive forces of the body for wholly unnecessary work; and if continued to any great extent, indulged in till it became an unconscious habit, it would finally result in a serious drain upon the life forces.

Nature is a chereful giver, and a generous. To do the extra work we impose upon her, she labors overtime, and for a while all is well; but as time goes on, she is like a house-mother with an abnormally famished, craving family. Faster than the provisions can come into the house or be prepared, they are devoured, and more demanded. Should we wonder if, at last, the good, thrifty housekeeper grew careless? Would it be astonishing if the once immaculate house became choked with rubbish and refuse? Would it surprise us if the quality of the cooking declined, and the fresh food itself became tainted with the toxic rubbish that filled the house? And if at last the bewildered house-mother backed out, and left the house to run itself with makeshift help? Yet this is what happens, in a degree, when we persistently waste the forces of the body.

Surely we owe nature all possible aid in the ordering of the house physical. Let us but once become aware that we are tensing unnecessary muscles in speech, or failing to co-ordinate the necessary ones; and with such consciousness the way to relief is plain. Consciousness is, indeed, the first step in the substitution of good method for bad method.

The study of scientific voice production tends to such muscular consciousness; the reasonable practice of proper method will inevitably result in the complete passivity of the non-vocal muscles and the easy activity of those muscles properly concerned in vocalization, whether for speech or song.

Particularly is this desirable for the deaf pupil. He is dependent wholly upon muscular sensation for evidences of erroneous method. One may easily see, then, how important to him is the development of muscular consciousness in forming proper vocal habits.

When such good habits have been firmly established, the vocal apparatus will take care of itself, leaving the brain free to direct unhindered the difficult mechanics of articulation.

Words, in the deaf child's speech, as in that of the hearing person, should flow out upon easy tone, as beads on a string. When he has the double battle to fight—that of articulation, on the one hand, and contention with erroneous voice method on the other—difficulty on difficulty is piled upon him, which means slower progress, less perfect results.

I am aware that many teachers, already over-burdened, would hesitate to add one more item to their labors. As a mater of fact, after a little intelligent study of sound vocal method, they can turn their *teaching* hours into voice practice by merely applying their theoretical knowledge every time they speak to their pupils—or to anyone else, for that matter. In some cases the results will be quicker than in others (depending upon the personal equation, as in everything), but inevitably the teacher, lecturer, or clergyman, as a result of his vocal exercises, will do better work; conserve more vitality; give distinctly more pleasure to those able to hear him; and, into the bargain, will find himself tolerably fresh at the end of the day.

Just here it may not be amiss to mention as an example one of the many cases benefited in this way by voice culture.

The Rev. Mr. N———, a clergyman, was sent to me by an eminent throat specialist of this city for chronic difficulty of the variety that is colloquially dubbed "a weak throat." His trouble was so marked that it was only by the greatest effort that he got through his arduous Sunday services, and Monday usually found him in bed, for at least part of the day, sick with exhaustion.

After the first few lessons, he had so far overcome his vocal troubles that he was able to add Monday to his busy week—feeling quite normal after his Sunday labors. Not only this, but his congregation noted with pleasure the improvement in his voice; and there were those among them who boldly opined that "he had been doing something to it!" As to the improvement in the *quality* of his voice, it might be supposed that beauty of voice, *per se*, would be a desideratum only in addressing hearing persons; and that any kind of tone would do for speaking to the deaf. Such, however, is not the case. Beauty and *ease* go hand in hand. Furthermore, beauty of tone will be found, upon experiment, to affect quite markedly the fluency of one's ideas. To illustrate: I have in mind the case of a student—a commercial traveller. One day he said to me with a laugh: "D'ye know, I've been selling more goods since I had these lessons." It seemed an unusual connection, so I inquired the why and wherefore. "Well," he said, "my voice sounds so pretty now-a-days that I like to hear myself talk; and *ideas* seem to flow right out on it inspirationally without any effort."

One may readily see how, thus, the cultivation of habitually beautiful tone would make for ease in teaching, if it helped one's ideas by merely ceasing to hinder them; and at the same time lessened muscular effort in tone production.

Now as to the second proposition for lightening the labors of the teacher by voice study, to wit, making the material upon which he works, namely, the deaf child, more pliable. This voice culture accomplishes. Let me explain.

In the deaf child we have a vocal mechanism stiff and unwieldy from disuse; either congenitally, or as a result of former inflammation. This is at once an obstacle to the study of articulation.

Medical treatment touches the surface condition (and, of course, the constitutional tendency as well), but *locally* the trouble lies deeper; and all the gargles, tonics, washes, and other applications are unavailing for a radical cure.

Let us take, for example, a case of *acquired* deafness in which the acute inflammation which robbed the child of hearing and of the power of speech has been cured through the efforts of the physician. Let us suppose the mucous membrane to be ordinarily healthy. Obviously, the work of medicine is accomplished. From the medical standpoint, the patient is cured. But there remains something beyond the power of medicine to relieve: there is set up, as the aftermath of inflammation, an atrophy of muscular tissue; a kind of ankylosis of the delicate bones of the inner ear; or adhesion of adjacent membrane.

All these at once make for difficulty in executing the throat movements that base the practice of articulation and voice. Thus, the teacher has to contend against a double obstacle: he needs all his patience and ingenuity to cross the gulf of silence, and instruct his pupil mentally to make certain movements. But when, in addition to difficult mental conception, the muscular machinery, stiff and unyielding, obeys reluctantly and imperfectly the mental suggestion; one may easily see how this adds to the work of both teacher and pupil in the accomplishment of final results.

It is here that voice culture steps in to complete and reinforce the valuable work of the throat specialist.

For the last condition named, membranal adhesion, the electric cautery has done wonders; but for the former two, voice culture is preeminent in its benefits. The stiffened muscles yield with astonishing celerity to the exact exercise that sends the life blood surging through them; soon the atrophy of disuse is overcome, and the pliant muscles easily obey suggestion from headquarters.

Not only this, but the ankylosis of the tiny bones of the inner ear tends to break up under the stress of the vibration of tone properly placed, ultimately giving to the partially deaf an added measure of hearing, and to the totally deaf a perception of vibration that cannot but be of value to him.

Not alone in pernicious tissue changes arising from past inflammation is voice culture indicated, but also as a supplement to the throat specialist's treatment in acute, semi-acute, or chronic perverse pathological conditions, it is invaluable.

It is with some natural reluctance that I venture to touch further upon so personal a matter as my own results in voice work as affecting chronic throat trouble. The matter is so serious, however, in its relation both to teacher and pupil, that I am sure you will pardon the digression, especially since no assertion, however reasonable, but is the better for practical illustration.

Le me cite, first, the case of M. X., a totally deaf child of about nine years of age.

At the time she came under my observation, she was suffering from a severe congenital tuberculous catarrh, her mother having died of consumption four days after the birth of the child.

The constant and progressive necrosis of the turbinated bones, the deterioration of the surrounding tissue, and the

unhealthy condition of the throat itself, established an odor that was at times unbearable; and frequently the child was sent from the class-room to have nose, ears, and throat douched with an antiseptic deodorizer; while windows were opened to give relief to those that remained.

In addition to this occasional treatment, she went every Saturday to a throat specialist, who, while pronouncing her case incurable, suggested that constant treatment was imperative to retard the inevitable as long as possible.

From the latter part of May, 1907, when I first saw her, until August of the same year, her zealous and conscientious teacher directed the practice of the special exercises I advised. Since this, she tells me that from May till August (when she was obliged through removal to another city to relinquish the child) not *once* was it necessary to send her from the class-room to be deodorized; and, still more surprising, she managed to get along without her weekly treatments, the specialist being out of town. Moreover, her general health improved markedly. And now, at the present moment, I am told that the child is apparently perfectly well, and her guardians have been able to dispense entirely with medical treatment.

By kind permission, I refer also to the no less marked results in the case of the teacher herself. When she came to me first she was a martyr to severe, chronic throat trouble. It interfered seriously with her teaching, and threatened to put an end to her work entirely, since the doctor earnestly advised her to remove to another climate; he said it was impossible to do anything for her here. But her work was too precious to leave, so she risked all, and stayed. Forty times he burned out the diseased tissue of her throat, and then called a halt; there was nothing more to be done. Under these discouraging circumstances she came to me as a final resort—probably with the feeling of a drowning man eying the straw above him as he goes down for the last time.

In consideration for your time I will omit the story of the intelligent, persistent, courageous work of this most satisfactory pupil, and mention only the steady, continued, and permanent improvement in her throat trouble.

This no longer interferes with her work in any way. It has practically disappeared, together with the excessive fatigue which formerly hampered her work. She tells me she *never* feels tired in her throat now, and that the results of any cold that settles there are soon dispelled by a few well-chosen exercises.

Touching this latter statement, there prevails, even in some illustrious quarters, a tradition—not to say a superstition—that in chronic conditions the voice should be given a complete rest. This is far from being substantiated by practical results. Discriminating exercise of the parts is *always* beneficial. In fact we may go a step further, and say that even in some acute conditions a little *judicious* vocalization can do nothing but good—unless (and this is of paramount importance) unless the vocal bands themselves are irritated or inflamed, in which case complete abstention from singing (or even in some instances from speaking) is absolutely necessary.

But to revert to the popular superstition that imposes complete inaction for the throat in chronic conditions. I have in mind an amusing case of a friend of mine, a professional vocalist, who carelessly allowed an acute inflammation of the throat to drift into a chronic condition. After some time, he became alarmed and went to a specialist; this he ought to have done in the first place. The doctor told him he was in a serious way, and that until his throat improved he must give up singing. He therefore abandoned all vocal work and gave himself over zealously to treatment. The throat did not improve. Then the doctor ordered him *not even to speak* until his throat was better. To that end he carried about with him a tablet upon which he

wrote all he needed to say—even his orders to the waiter at table, and the necessary remarks to his friends upon the weather. This continued for months—three, I think—while all the time I fired my ideas at him, and begged him to give his throat and voice some exercise. At last he yielded to my importunities and, without telling the doctor, did some judicious vocal work. In a week the improvement was so marked that the specialist threw up his hands in amazement at the wonders at last wrought by *silence!* and to the end of the medical treatment my friend continued his throat exercises, till both together effected a complete cure and the restoration of his singing and speaking voice.

Of course reasonable rest—holiday time—is another thing. Every one needs, and should have, complete cessation of burdensome activities after prolonged work.

It is to be understood that both in the treatment of unhealthy throats, and in the study of vocal production for ease and power, hit-and-miss exercises will not do; the correct balance of muscular action must be intelligently kept, or wrong vocal habits will be induced, which will later present themselves as obstacles in the path of clear and easy vocalization. The importance of a sure vocal foundation in voice building cannot be overestimated. This is particularly important in the case of the deaf child.

The ordinary person making tone in speaking or singing is guided, perhaps unconsciously, by the ear. Deaf children are deprived of this inner mentor, and their voices are characteristically harsh and unmusical in consequence.

In two ways voice culture helps this condition:

1st. *The correct adjustment of the expiratory and laryngeal muscles will immediately improve the quality of tone without any aid from the ear whatever.*

2d. The elimination of interfering *non-vocal* muscles—to correct a constant fault with nearly everybody—will also produce astonishing and immediate results.

As this is being accomplished, even the normal hearing person will amaze himself by making far better tone than he ever dreamed he possessed.

Another point: The work done by the teachers of the deaf is so wonderful in itself that it would seem a pity that it should not be wrought upon the best available material. A sculptor, in planning for a work that shall express his genius, would never dream of wasting his final labor upon a poor medium. Instead, he seeks till he finds the stone without a flaw before he even puts chisel to it.

Voice is the strong, pliable, musical material out of which speech is made. It behooves the teacher therefore to secure all possible perfection, pathologically and mechanically, of this medium, the voice; so that the final achievements of his patient skill may not be marred by the least unnecessary flaw.

The attainment of vocal perfection demands the selection and application of the proper exercises in each individual case. For this, the well-trained ear is indispensable to the teacher in making accurate diagnosis of vocal faults in the pupil; and also in selecting the appropriate exercises to overcome such faults.

An ear well trained to this work is only to be attained by conscientious observation in one's own case of the relation between muscular action and quality of voice. It is impossible for the teacher to observe from without, through the sense of touch, the deeper action of the muscles concerned in making tone. While from within, even the laryngoscope is hampered by the tendency to constrained muscular action set up by its own presence in the throat. But the well-trained ear is a most reliable guide, and voice implies the almost unconscious acquisition of this faculty. With practice the teacher can detect the instant the wrong muscles begin to act in tone production. With such accurate apprehension of wrong method, and a number of

remedial exercises to choose from, the goal of adequate voice is not far off.

A few words here as to the practicability of voice training. Many people think voice culture akin to the occult—a mysterious subject woven of vague intangibilities, impossible of comprehension save to the elect. While it is true that there are many scientific points, many extraordinary facts, that have to do with tone, many curious effects regarding a given pitch, these are of interest only to the investigator of phenomena, or to those who take a purely *mental* interest in the science of voice. They are of little practical value to the ordinary student who seeks to compass the art of speech or song. To such a one, the making of an easy, beautiful, ringing tone is the crux of the matter; as to the mathematical number of vibrations inherent in it, or the related pitches and overtones which sympathetically sound with it, or the thousand and one weird results that follow its emission, for practical use they do not concern him, and as a matter of fact would waste his time if he seriously involved himself with them.

There is also a diametrically opposed conception of voice culture, which is equally inadequate; a theory that holds vocal culture to be a mere matter of "opening one's mouth and singing," letting the voice out, as it were. As if voice were some rare animal confined in all its perfection in the throat, and kept from falling out only by the barrier of the lips and teeth.

To such it is plain that, if no voice comes out when the open door gives it a chance to escape, the matter is simple—there is no voice there!—the person is not "gifted with song," and would better avoid in future the fatigues of an open mouth.

Now the truth lies just between these extremes. If when you open your mouth you cannot speak or sing a

reasonably agreeable, resonant, and musical tone, do not conclude you have no voice. Either you are not correctly using the right muscles, or you are using the wrong ones, and the chances are you have done this all your life, to the detriment of your speaking voice as well as to the absence of your singing voice.

As corroborative evidence of the practical nature of voice culture and its easy acquisition and comprehension, may I beg your indulgence to quote from the letter of a scientist holding at the time the chairs of physics and chemistry in one of our large colleges? After mentioning the improvement in his speaking and singing voice, he says: "I feel that I could now undergo, without any inconvenience or discomfort, a period of protracted speaking in the lecture room which last year would have been painful, to say the least. After an experience of six years in teaching, it has not been my good fortune to deal with a subject in which I could obtain results, apparent to both teacher and pupil, comparable with those secured by you in so short a time."

So much for the simplicity of the subject of voice building, from the viewpoint of a man who had both studied and taught many things, and was therefore doubly entitled to judge.

To sum up the matter in closing.

Serious vocal study is of paramount importance as a simple means for reducing the fatigue incident upon the engrossing work of the teacher; as making the pupil more amenable to instruction; and as rendering the character of the work more perfect in its finality.

But, whether in the case of teachers, pupils, clergymen, lawyers, actors, or professional singers, the results are invariably the same: more voice, and of greater beauty; added compass; more ease; and less physical and nervous strain. So that, considered both as a means to an end

and the increased perfection of that end, voice culture is well worth while for the teacher of the deaf.

THOMAS M. TURVEY.

10 *South Eighteenth Street,*
Philadelphia, Pennsylvania.

THE SIGN LANGUAGE. A MANUAL OF SIGNS.*—IV.

Motion and Action.

Note.—In general it may be laid down as a rule that the sign for an action should bear some resemblance to the natural movement.

Go, Leave present place, Depart.—Make motion with finger or hand away from the body. Also, hold left open hand in front, palm toward breast; rest right hand on back of left hand, remove, and motion outward. The latter is more correctly for "send."

Leave, Retire, Withdraw oneself.—Extend open hands, palms down, out toward the left side, one farther toward the left than the other, somewhat "tandem;" draw them back toward the right side of the body and a little up, bending the fingers down from the knuckles.

Leave, Lie, Let alone, Neglect.—Hold the open hands out toward the left side, palms toward each other, left hand extended farther than the other; push the hands both forward toward the side (or front), and stop with a jerk.

Give.—Bring out hand, make motion as of taking up something, and give to imaginary person.

Get, Obtain.—Reach out left "S" hand and then make a grab upon the top of it with the right.

Receive, Get (by the speaker).—Make similar motion but at the same time draw hands toward you.

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Catch.—Same as for "get" but make the motion more quickly. To catch a ball, represent motion of catching.

Carry, Bear from one place to another.—Reach open hands, palms up, back beyond the right side, the right hand farther out than the left; imagine something having been put in the hands and carry it to the front of the body and beyond to the left side.

Bring, Convey toward oneself.—Reach out open hands, palms up, as if to receive something; then draw them back toward you.

Climb.—Imitate climbing with the hands, lifting one above the other on imaginary tree.

Drive.—Hold imaginary lines and imitate driving.

Food, Eat.—Throw the "&" hand lightly against mouth and repeat several times.

Feed (act of feeding).—Make sign for "eat" and then make motion of giving food.

Drink.—Make motion of lifting a cup to the mouth, and tilting it as in act of drinking. To drink, in sense of habitual use of intoxicating liquor, throw the end of the thumb of the "Y" hand up against the mouth and repeat several times. The hand thus represents the bottle.

Send.—Place end of right open hand on back of left and then throw it off, motioning outward, with "G" hand.

Progress, Motion forward.—Place bent hands in front of you, the fingers pointing toward each other; move the hands forward with a steady motion. To express the idea that the progress is made in successive stages, lift the hands and move forward a space, and repeat.

Improve, Gradual progress upward.—Hold out left "B" hand, forefinger edge up; place the little-finger edge of "B" right hand crosswise near end of left forefinger; raise it and drop it again on left hand a little farther up, and continue motion the length of the hand, and beyond, thus measuring off spaces of advancement.

Deterioration, Decline, A falling off, etc.—Make similar motion to above, but begin at about the elbow, arm inclined down, and move hand in opposite direction (down).

Advanced, Higher up.—Place bent hands in front, palms down, fingers pointing toward each other; raise the hands; if the progress upward is by stages, indicate by lifting the hands a small space at a time.

Travel.—Pointing the forefinger of the "G" hand out, push it outward with a winding or slightly zig-zag motion. Or,

(2) Move the "G" hand, with the forefinger pointing down, in a semicircle, giving the finger a circular twirling motion.

Cars.—Hold out the left "H" hand, back up; place the right "H" flatwise on the knuckle of the middle and forefinger of left, then push the right "H" along the other as on a track; repeat the last motion, drawing the right hand back and forth several times.

Railroad track.—Make sign for "cars," then with hand on either side of you indicate width of a rail by opening thumb and forefinger and push the hands along at the side to represent the rails.

Ship.—The thumb and two fingers are held up representing the masts of a ship; then move hand so as to point fingers forward and give hand motion of a ship rising and falling with the waves.

Walk.—Let the hands represent the feet, and with palms down, lift and move them forward alternately as if they were feet in the action of walking.

Ride.—Place the right forefinger and middle finger of one hand astride the left "B" hand held edgewise; lift the hands and let them fall, imitating motion of horse.

Wagon.—Place the "G" hands well out, fingers pointing toward each other; describe circumference of front wheels with the ends of the fingers; bring hands back and repeat for hind wheels.

Carriage.—Same as for wagon, then bring the hands, now bent, up above the height of the head and move forward to represent the carriage top.

Lead.—Grasp end of open left "B" hand, held forward, end pointing out, with the thumb and fingers of the right, and pull forward as in act of leading.

Push.—Hold the open hands up, palms out, and give an imaginary object a push.

Run away, Slip away, Leave clandestinely.—Hold out the open left hand, palm down; push the right "G" hand under it quickly as if following the motion of one getting away under cover. Or,

(2) Hold open left hand as above, but pointing upward at an angle of 45 degrees; throw the right hand across palm as before but pointing upward.

Meet.—Hold forefingers of both "G" hands opposite each other, pointing upward; bring them together as if they were two persons running together.

Pass, Meet and pass by.—Make same sign as in foregoing, but instead of striking the fingers together let them continue beyond each other. Or,

(2) *Pass an examination, Go by,* etc.—Hold left "A" hand out and right "A" hand a little behind it, thumbs up; push the right hand lightly against end beyond the left in a way that the thumbs pass parallel.

Run.—Hold the open left hand pointing out (edgewise); hold the open right hand back of it, pointing down; throw the right hand forward rather quickly so the palm brushes across the palm of the left.

Throw.—Make feint of throwing.

Swim.—Represent action.

Fly (also wings).—Place ends of open hands on shoulders, move out and make motion of wings in flight.

Stand.—Stand "V" in palm. (Here the fingers represent the legs.)

Fall.—Place hands as above, then let the hand fall over.

Rise, Get up (from a fall or from a lying posture).—Lay "V" back down, in palm of hand, and lift it to a standing position.

Fail, To have one's work fall.—Hold open hands up on a level with the chin one above the other; let them fall, rolling over each other in the descent. Or,

(2) *To fail in an attempt, To have one's "pins taken from under him."*—Stand "V" on the palm; suddenly throw out the ends, and let the "V" fall on the palm so the thumb strikes it. Or,

(3) Throw the back of the right "V" hand against the upturned palm of the left hand and slide it along the length of the hand outward.

Succeed.—Place the forefingers of the "G" hand in front of you, one above the other and pointed in opposite directions; raise the hands, revolving the fingers around each other.

Accomplish, Win out.—Same position and similar motion, but raise the hands quickly and give but one revolution of the fingers, and finish with sign for "get." Or,

(2) Indicative of a continual "getting;" make the sign for "get," and repeat it several times while you raise the hands together.

Jump.—Stand "V" in the palm; draw hand back a little, bending the fingers as the legs are bent when about to spring; throw the hand forward, bringing the fingers out straight. Observe that the fingers of "V" imitate the motion of the legs in jumping and the hand the body.

Offer.—Hold out the hands toward imaginary person as in act of offering something.

Accept.—Hold out hands as if ready to receive something; then close hands while drawing them back toward you and turn ends almost against body.

Move, Motion from one place to another.—Reach hands

out toward one side, pick up imaginary object with thumb and fingers, and lift it over to the other side.

Meeting, Assembly, Gathering.—Hold out the slightly bent "5" hands, well in front at the sides; draw the hands together, closing them so the ends of the fingers and thumbs all meet together in front of you.

Play, Recreation, etc.—Hold "Y" hands out in front so the "horns" of the "Y" on one hand point toward those on the other; shake both hands up and down from the wrists repeatedly, moving the forearm but slightly. The same sign when followed by sign for "meeting" is used to signify a party. To signify a play at the theatre or acting, hold "A" hands in front, perpendicular; move up and down alternately.

Take.—Reach out the hand, grasp imaginary object and draw it toward you.

Copy.—Holding the left open hand as a slate or paper, reach out the right "5" hand, close the ends of the fingers and thumb as if taking off something from imaginary page, and then withdraw hand and place it on left palm.

Buy.—With the right hand as if holding money between the thumb and fingers place it, back down, in the palm of the left and then reach the right hand out as if offering the money to some one.

Sell.—With thumbs and fingers together, as if holding something, lift the hands up in front so the ends will bend from the wrists and point down; without moving the arms give the hands a shaking motion outward.

Owe, To indicate something is due another.—Place the end of forefinger of right "G" hand in palm of the left held upward; in this position move both hands forward toward imaginary person. To indicate the debt is due to oneself, with hands in similar position draw them toward you.

Demand, Require of some one.—Same motion as in last sign, but hold the hand well out and throw the end of the

finger somewhat forcibly on palm, drawing the hand back quickly. Some add motion of forefinger, pointed down and drawn forcibly toward self.

Hesitate.—Hold "G" hand with forefinger pointing upward; move forward, stop suddenly, and repeat motion in a halting manner. Some make sign as in "doubt."

Become.—Hold open hands out, one a few inches above the other, palms toward each other; turn both hands at same time so as to reverse their positions.

Keep, Take care, Be careful with.—Hold left "V" hand with ends of fingers pointing outward, forefinger up. With right hand in similar position place it on the other so that the little-finger edge of right hand rests on forefinger edge of left and all four fingers extend out one above the other (or crosswise); raise the right hand a little and throw it down again; repeat several times. To indicate great care, move the hands together slowly up and down, or giving them a circular motion; throwing the hands together in this position warningly at one is to indicate the idea one had better look out.

Find.—Reach out "5" hand; draw ends of forefinger and thumb together as if picking up something, and raise hand.

Lose.—Place finger nails of bent hands together, back to back, so the ends of the fingers point upward; swing the hands down and separate till the fingers come straight.

Change.—Hold the "A" hands out opposite one another, thumb side up, several inches apart, with a kind of twisting motion; change the position of the hands so the left will come over toward the right and the right under toward the left.

Pick.—Merely represent action of picking something off an imaginary bush.

Select, Pick out.—Reach out the right hand over left open hand and with the thumb and forefinger pick out an imaginary object.

Chase, Follow.—Place the "A" left hand out in front, and the right "A" hand directly behind it, thumbs pointed up; move both forward tandem fashion. It is usual to give the following hand a peculiar twisting motion from the wrist, to indicate, probably, that it is the one pursuing. To indicate a chase more or less hard and long drawn out, indicate by emphatic motion or repeating the sign and twisting both hands.

Work.—Throw right "A" hand down against the left "A" hand two or three times so that the lower side of right wrist strikes the top side of left wrist. (With both hands in position of "A" throw wrists together.) Same sign followed by "much" signifies "busy."

Wait on, Serve, etc.—Hold out open hands, palms up, as if holding a tray; move hands from side to side simultaneously, first in one direction, then the other.

Distribute.—Bring the closed hands with ends quietly touching each other before body; throw them outward so each describes a semicircle in opposite directions, opening the hands, palms up.

Contribute.—Drop into an imaginary receptacle an imaginary coin, first with one hand and then with the other.

Happen.—Bring the "G" hands in front held parallel and pointing out with "G" up; turn the hands with a quick motion so that the forefingers twist inward, bringing the backs of the hands up. The same sign also signifies "accident."

Make.—Hammer the top of one fist with the other two or three times, giving both hands a twisting motion.

Arrange, Put in order.—Bring the open hands out toward the front right side, palms toward each other, several inches apart, and ends pointing out; keeping them in same relative position move them along in front of you to the other side, giving them a slight up and down motion.

Ready.—Same as above; then sign for "finished."

Prepare, Get ready.—Express by making sign for "make" and "ready;" or, "arrange" and "before."

Introduce.—Extend one open hand out (palm up) toward the front side and the other hand toward the other side and then bring the hands toward each other. (Each hand represents a person introduced.) The idea of a simple introduction may be expressed by using simply one hand.

Invite.—First touching the left forearm or back of left hand with right palm, the hand is extended out toward an imaginary person, palm up, and then drawn toward you.

Attend, Give attention to.—Place the hands at either side of the head like blinders on a bridle; move the hands forward to indicate that the sight is to be confined within those limits.

Appoint.—Reach out the hand toward the side and pick out an imaginary person with the thumb and forefinger and lift him over to a position in front of you.

Vote.—With ends of the thumb and forefinger together, put them in "O" of other hand. *Elect* is indicated by making sign for "vote" and then "appoint" to indicate the appointment was by ballot.

Graduate.—Hold left open hand out, palm up, and circle it with the fist and bring down fist on palm (indicating paper with seal) and add sign for "retire."

Steal.—Hold out left hand pointing out edge down; reach right hand (or left "A" hand) under wrist, grasp imaginary object and draw it back.

Help, Aid, Benefit, Give assistance.—Place the right open hand under left "A" hand and lift it up.

Support, Uphold.—Similar motion but use the right fist; place it under the left forearm and lift as in position of a pillar.

Sit.—Extend open hands, palms down; push downward. Or, place the right "U" hand over the edge of the left extended hand, bending the fingers as a bird's claws when it is perched.

Rule, Control, Govern, Exercise authority over.—Place left "A" hand in front of you in grasping attitude, with back up and thumb pointing toward the body; reach out right "A" hand from side, open it and extend out and around in semicircle toward left, palm down.

Stay.—Bring both "A" hands in front and place ends of thumbs together, one above the other, and give downward pressure of hands together.

Plant.—Drop imaginary seeds from hand as it is moved along. Usually make sign for "seed" first, by closing the right forefinger and thumb; strike ends several times along the extended left forefinger.

Sow.—Merely imitate the motion of sowing.

Grow.—Hold the right "&" hand with finger ends up; bring the left hand and close around it so the ends of the fingers will be just below the "O;" push right hand up through the "O" as if plant was coming above the ground, and spread out the fingers, making "5" hand as they come up through.

Harvest.—Reach out left hand and grasp imaginary stalks of grain and with the forefinger of right crooked like a sickle make motion of cutting stalks.

Mow.—Place right "5" hand on left and imitate motion of sickle in mowing.

Ornament, Adorn, etc.—Place closed hands together so the ends of the fingers all meet; separate and put them together again, giving both hands a twisting motion, and raising them at the same time; repeat several times.

Punish.—Holding the left hand out as if holding imaginary culprit, bring the right "G" hand down as if using a switch on him.

Come.—Make motion as if motioning for some one to come to you, using both hands. Or, draw both "G" hands from side toward self, fingers pointing toward each other.

Continue.—Same position as in "stay," but let the motion be outward instead of downward, thus showing idea of continuity.

Disappear.—Place the right "5" hand with the fingers brought slightly together pointing up so the back rests in "C" of the other hand, let the hand slip down through the "C" and as it does so close it till when the right hand is gone the left hand will be making "O."

Melt, Fade, Die out, Dissolve, etc.—Hold up both "5" hands, fingers pointing up, palms toward you; let the hands drop gradually, drawing the ends of the fingers to position of "&."

Live.—Place both "5" hands against the body at waist, one toward either side, thumbs up; draw hands upward, remaining against the body.

Breathe.—Place hands on chest, move them out and back against body, imitating action of lungs in breathing.

Die.—Hold out the open right hand in front from the side, palm down; give the hand an outward turn, bringing the palm up.

Dead.—Is indicated by "die" and "finished."

Bury.—Make motion of digging, one hand as a spade; then bring the top edges of the hands together, with them forming the mound on a grave.

Destroy.—Hold out both "5" hands, one above the other in front, palms facing; bring the hands together, closing them as if grasping something, so when they come together they meet closed fingers against fingers; rub the top hand across the lower as if grinding or mashing whatever was between to atoms, bring hand back across and finally open both hands directly.

Burn, Fire, Indicating flames.—Hold out the bent hands, backs down, raise them alternately, working the fingers to represent the motion of the rising and falling flames.

Decrease, Gradually grow smaller.—Hold the open hands

out, one down and the other quite a distance above it, palms facing; gradually draw the hands toward each other, giving them a bellows-like motion.

Borrow.—Make sign for "Give to me to keep."

Lend.—"Give you, keep."

Tease, Persecute.—Push fingers of right "A" hand over (lengthwise) the top of thumb in left "A" hand.

Seek, Look for.—Move "C" in front before the breast or face, describing a circle from right to left.

Collide, "Run up against it."—Hold the hands in front on opposite sides, the thumbs and middle fingers bent at the joint and held toward each other; bring the hands quickly together so that the fingers come violently together.

Struggle, Indicating trying to overcome obstacles.—Position of hands as they come together as above; then rub them across one way and then the other in effort to push each beyond the other.

Cry.—Place the ends of the forefingers on the face below the eyes and rub down as if tracing tears.

Cry out, Yell.—Place the "C" hand at the mouth as if receiving the sound; draw away the hand, continuing the motion as if drawing the sound out of the mouth.

Sign, To make signs.—Place the "G" hands in front, one higher than the other, pointing them upward at an angle of 45 degrees; move the upper hand from front to back and the lower from back to front, bringing each then to original position; the motion of both hands is similar to a braiding motion.

Sign (to sign a document).—Make sign for write, then slap the end of the open right hand down in one corner of the palm of the other in the place where the name is usually signed.

Begin, Commence.—Extend left open or "H" hand; force with a twist the end of the forefinger of right "G" hand between the forefinger and middle finger of "H."

Stop.—Strike the upward turned palm of the left open hand with the lower edge of the right open hand.

Intercept, Prevent, Check motion or advance.—Hold the open hand up, palm toward self, or turn the back toward the direction from whence the motion is supposed to proceed, and then moving it toward self strike and stop it with the lower edge of the right open hand.

Procession, etc.—Hold the "V" hands front, ends up, one behind the other; push them forward, keeping them tandem, and repeat the motion several times.

March.—Place the "4" hands with fingers pointing down, one before the other; move the fingers forward, bending them in unison from the knuckles and moving the hands but slightly forward. The idea is the fingers represent legs keeping time together.

Hurry.—Push "H" hand rapidly forward, giving the "H" an up-and-down motion all the time.

Fast, Quick, Indicating rapidity of motion.—Place the thumb and forefinger as if ready to shoot off a marble; hold up the left "B" hand pointing upward; make motion of shooting a marble and pass the hand while doing so quickly against and across the palm of the other; sometimes merely the marble-shooting motion is made in the air.

Strike.—Merely strike the palm of one hand with the fist of the other. Or,

(2) To indicate the striking of a clock tap the forefinger against palm, imitating motion of striker.

North, South, East, and West are indicated by moving "N" hand toward the north for north, the "E" hand eastward for east, and so on for the other directions.

Deflect, Go off the track, Deviate.—Hold the forefingers together parallel, pointing outward, then suddenly turn one away and push it out from the other.

Approach, Motion toward.—Place the partly bent left hand in front rather toward the left side, forefinger edge up;

place the bent right hand same position, pointing other way, behind it but several inches back toward right side, and gradually let it approach the one in front.

Arrive, Reach.—Begin motion as above and next let the hands go forward and one fall into the palm of the other, and then hold the hands forward, palms up.

Discharge, Expel, Remove from employment.—Hold up the forefinger of left "G" hand and with the forefinger of other hand knock it down. Or, hold up left hand similarly and knock down. The former sign carries a suggestion of malice or vindictiveness.

Subtract, Take away from, also denoting *Absence* or *Deficiency.*—Hold open left hand with palm toward self; throw the ends of the fingers of the other hand with a scratching motion downward against the palm of the left, drawing it down and away from the hand as if taking off something.

Add, Increase.—Place the "&" hands, one on other, fingers meeting; let the right hand rise and fall against the left, lifting both up meanwhile.

Cause, Effect, Produce.—Hold the "A" hands up toward the right shoulder, thumbs pointing outward; carry the hands diagonally across in front of you and open fingers to make a motion of emptying the hands.

To bear, Bring forth, Be born.—Place the open hands near the body, one palm against back of the other, palms toward self and slightly upward; push the hands outward. To indicate bearing fruit, push right "5" hand up through left, closed over it, and let it then drop on the left hand.

Power, Strength.—Hold out the fists in front from the sides, elbows at sides; lift the fists toward the right, and throw them over the left with a circular or swinging motion and bring them down; keep them in the same relative position as to distance and direction of motion all the time.

Weakness.—Place ends of "V" standing in palm of hand; bend the fingers so the hand falls toward the palm.

Influence, Cause, Effect by force or persuasion.—Place the "A" hands out a little, thumbs pointing upward, one well in front and the other behind but off at one side; turn the hands so that the thumbs finally point outward, moving both hands simultaneously.

Influence, by example.—Hold "A" (left) in front, thumb up; place end of "&" hand on end of thumb, then push it out and away, diverging the fingers at the same time.

Urge.—Hold out the "A" hands, thumbs pointing out and the crook in forefinger pushed out somewhat; push the hands out and draw back quickly, repeating the motion several times, and moving in a semicircle toward side.

Trade, Substitute, Exchange for.—Place the "A" hands in front, one directly behind the other, thumbs pointing up, one hand down and under the other, then up on the other side, at the same time changing the other hand in the opposite direction so that the hands change relative positions.

Use, Useful.—Hold the left open hand out, palm up, but hand slanting 45 degrees; place the palm of the right open hand against the lower edge of left, so that the fingers touch the back of it; bring the right hand around and let palms touch palms, but do not move left hand; repeat several times.

Try, Effort put forth.—Hold "A" hands out in front; push them both forward with an apparent effort.

Act, Conduct, Deed.—Place bent hands in front from the side, fingers bent and pointing down; move them apart and then toward each other quite actively and give them a shaking motion. Some move hands in same direction all the time from side to side. This is more particularly mere conduct, while the former indicates activity.

Mix, Mingle in confused mass, Confusion.—End the fingers of "5" hands into claws, and hold them, one above the other, fingers toward each other, and turn them in a

circular motion, but in opposite directions, mixing the fingers.

Revenge, Retaliate, Pay one back.—With thumb and forefingers in pinching position, throw them together so the fingers (closed) strike at the same time the thumbs and forefingers touch. Or,

(2) More specifically *Retaliation, or to make return.*—Hold the "O" hands one behind the other, the fingers of the "O" up; change their relative positions by drawing one down, under and up beyond the other. The sign is frequently made in the air by right hand alone, merely throwing it down with a jerk.

Complete, Finish, Bring an end to anything.—Place right "B" hand with lower edge at right angles across the top edge of left "B" near the wrist; push it along the edge of the hand till it reaches the end, then "chop" it off.

Beat, Defeat, Win over.—Hold out left "A" hand, thumb pointing up; holding the other hand in similar position somewhat back, bring it forward against the other and push them both over, indicating the one had overcome the other.

Scold, Reprove.—Hold up the right "G" hand and shake the finger at; the left hand is sometimes held down at the elbow or against forearm of the right while the shaking is in progress.

Wage war.—Hold out both "4" hands with fingers pointing toward each other, back of fingers up, push the hands to one side, the right following the left, then to other side and *vice versa.*

Fight.—Knock the fists against the sides of the face, or before the face.

Command.—Holding up the left open hand, pointing upward, throw the forefinger of right "G" hand against it crosswise so the finger will point outward, and throw out forefinger forward as in sign for "tell."

Order (to give a command).—Hold the end of the fore-

finger of the right "G" hand at the mouth, under the lower lip, give it a slight twist outward as in "speak," then elevate toward the right side, carrying the hand as far out as the shoulder, and as high as the head, then turn the hand so the palm is out and throw the hand forward and down. The hand stops before it goes clear down and the forefinger bends forward.

Contest (between opponents, more or less bitter).—Hold the "G" hands in front, palms toward self, end to end, a foot apart; move both together toward left side, then toward the right side, keeping their relative positions. Repeat motion several times.

Contest, Rivalry, Race.—Hold the "A" hands out in front, thumbs up, and side by side; push the right hand outward to front and at the same time draw the left back; then the left forward and right back; and so on, repeating the motion several times.

Persevere, Persist, Continue in action.—Draw the "B" hands up from the sides, palms down, and let the forefingers strike together, side by side, with ends of the hands pointing outward; separate and strike together again while the hands continue to be moved outward.

NOTE.—The same idea could be expressed by signing for "suffer" or "bear" and "continue," but the latter would indicate more a mental action.

Give up, Lose hope, Discouraged.—Hold the "A" hands in front, thumb toward thumb; lift the hands slowly, open them to position of "5" and simultaneously with the action draw the head and shoulders back somewhat.

Surrender.—Hold hands same as above, but drop them and open to "5."

Abandon (throw aside).—Same position of hands, but throw them at the side as if casting something away.

Assume (to take hold of a project or business).—Reaching out both hands at the same time, make a grasping motion

as if taking up something and lift the hands somewhat. At first the hands are open and they assume the "S" position as they are lifted.

Accuse (to "call," as when we "throw it at" one that one is so and so).—Pointing the "G" hand out, push it toward imaginary person with a "digging" or thrusting motion.

NOTE—If the speaker is accused, the finger is turned toward self.

Connect with, Join to.—Holding the bent "5" hands out, draw them together joining the thumbs and forefingers like the link of a chain.

Disconnect, Part from.—With hands in position as at close of above sign, drop the hands apart.

Defend, Protect.—Hold the "S" hands out in front so the left shall be near the body with the thumb inside and the elbow elevated to the same level as the hand, the right in similar position but just beyond it on the outside; as soon as the hands are brought into position they are given a slight resisting motion outward. Sometimes the sign is completed by changing the right hand to open, and with palm out both hands, the right on outside, moved from left to right as if warding off danger.

Rise (from a low to a high estate or condition).—Hold the right "A" hand out rather low, thumb up, and gradually elevate it, giving it a shaking motion from the wrist without giving the arm any motion from side to side.

Sink (to fall from a high to a low estate).—Reverse the motion above.

Rise, Appear (come up unexpectedly).—Holding the left open hand out in front, bring the right "G" hand under it and thrust the forefinger up between the middle and third fingers of the left hand rather suddenly.

Shut, Close.—Strike the open hands together, forefinger to forefinger, their entire length.

Open.—With hands in position closed as above, draw them apart.

NOTE.—To open or close a window, place the hands, the left pointing toward the right, and the right toward the left, then strike the little-finger edge of the right against the forefinger of the left, for "shut." For "open" or "raise," place the hands together as above and then raise the right away from it.

Injure, Harm.—Hold out the left "A" hand and across the thumb strike the right "A" hand outward so the backs of the fingers and knuckles rub against the thumb rather forcibly. A slight injury may be indicated by making the motion easier and repeating it once or twice.

Kill.—Holding the left open hand out, pointing upward, and palm toward the right, thrust the right "G" hand outward, so the side of the forefinger strikes against the palm as the finger passes it and continues across the palm; give the forefinger a twisting motion. Note that the motion is one of stabbing. Some follow with the sign for "die," turning the open hand, palm up, off toward the side.

Expand.—Holding the bent "5" hands near together and palm to palm draw them apart toward the side in a way to indicate increasing size.

Condense, Make brief.—Hold the "C" hands out and bring them together so the right comes just above the top of the left and when they touch (the little finger of the right along the forefinger of the left), close the hands to "S."

Separate, Draw apart.—Place the bent "B" hands with backs of the fingers together and draw apart toward the sides.

Fish.—Sign for the animal "fish," place the end of the left open hand against the right forearm with the right hand extended outward, move the right hand from side to side like the tail of a fish in swimming; then make motion as if lifting a fish-pole in the hands.

Hunt.—Make motion as if holding a gun in the hand and

pulling the trigger, repeating the motion and moving the imaginary gun from side to side.

Earn.—Holding the left open hand out, palm up, place the right "C" hand upon it and scrape it across the palm toward self.

Save.—Hold hands somewhat close to self, repeat the motion above, then while turning palm of left hand toward self and making a pocket with it and the body, thrust the right "&" hand into it.

Spend.—Lay the back of the right "& " hand in the open left; push the right out across the left into position of "5."

Lie, Recline.—Lay the back of the right "V" hand in the palm of the open left. Sometimes the right hand is also drawn a little toward self.

Rest.—Fold the arms across the breast.

Aspire, Aim toward securing an object.—Place the end of the forefinger of the right hand at the side of the forehead just above the eye, and hold the left "G" hand out, forefinger pointing upward; bring the right forefinger away from the forehead and carry it to and strike the end of the left forefinger with its end.

Fine, Charge.—Place the end of the forefinger of the right "G" hand against the open left hand, palm up; draw the right hand away, crook the finger, and strike the end of the joint downward against the palm of the open left hand, now turned toward self, allowing the right hand to pass down past the left.

Tax.—Strike the end of the forefinger of the right "G" hand in the upward turned palm of the open left several times.

Revive, Bring up something from the past.—Reach the hands back over the right shoulder and grasp imaginary object and drag it forward.

Hide.—Place the thumb of the right "A" hand against the mouth, then bring it down and place it under the left

bent hand held in front, palm down; the left hand rests on the right at end of sign.

Seek, Investigate.—Move the right "C" hand in front of the face in a circle from right to left, keeping the "C" side toward the face; keep the motion continuous for a little while.

Depend.—Suspend the right "G" hand by the forefinger upon the edge of the left open hand, palm held toward self.

Suspend, Hang.—Crook the forefinger of the right "G" hand and make motion of hanging it on an imaginary nail.

Sleep.—Draw the right "5" hand down across the length of the face, touching the palm against it.

Wake.—Place the closed "O" hands at the side of the eyes (one on either side) and quickly open the thumb and forefinger, thus representing the opening of the eyelid.

Scatter.—Draw the "&" hands up against the breast, end to end, then throw them both outward toward the sides, opening the hands to "5."

Beg, Ask alms.—Hold out the right hand as a beggar does and draw it toward self several times.

Wash.—Rub the "A" hands, fingers across fingers, as one does in rubbing clothes in the wash.

J. SCHUYLER LONG,
Head Teacher in the Iowa School,
Council Bluffs, Iowa.

[TO BE CONTINUED.]

A WAY OF IMPARTING NOTIONS OF TENSE TO YOUNG DEAF CHILDREN.*

DEAF children experience no difficulty in learning the meaning of verbs of concrete action, but they require

*This paper was written for the enlightenment of some friends who knew nothing of the deaf or their education and therefore contains various explanations superfluous for most of the readers of the *Annals*.

much careful teaching before they understand that variation in the verb form indicates difference in time. It is the purpose of the present paper to outline a way of introducing pupils to this subject—a way which has proved successful in actual practice.

It is essential to the understanding of what follows that the reader shall have some realizing sense of the mental condition of the children who are to receive the instruction. Deaf children enter school unaware that the ordinary world communicates thought through speech; when they are ready for these tense lessons they have discovered that the world at large possesses two means of communication—speech and writing; and because English is not a phonetically spelled language, and because "visible speech" is readily visible only to the expert, they instinctively *think* the feeling of the uttered sound when they speak themselves, but desire both the written and the spoken word from the speaker. (The person who always says "Spell it," before accepting a new word, is in a somewhat analogous mental condition.)

These children know about a hundred verbs which admit of complete illustration—*run, jump, walk, pick up, carry, eat, drink, sew,* and the like; and they know a smaller number of verbs of more abstract meaning—*think, remember, forget, take care of,* and so on. They know these verbs in the imperative and the simple past—that is, they have been accustomed at the command "Run!" to run, and to say and write, "I ran," or "John ran," after the completed act; they have used the present progressive of the verbs in describing actions in pictures, such as "A woman is sewing," and they have used the future of the verbs in connection with the events of school life, like "We shall go home at two o'clock;" but this use of the varying forms has always been a matter of imitation; they have never yet been called upon to exercise any independent

choice or discrimination in the selection of the necessary form. In addition to their verbs they know two hundred common nouns, many proper names, all the pronouns, about fifty adjectives, and the commoner prepositions. Most important of all, they are able to comprehend—from the teacher's lips and from the blackboard—a great deal of language which they could not themselves use, precisely as the normal infant understands much of what is said to it long before it can talk.

This comprehension of language beyond their power to use is a valuable asset for deaf children; by utilizing it the teacher prepares their minds for future lessons, freely employing for the description of chance happenings the language forms next to be taught, so that they may not be altogether strange when they are reached in the formal teaching.

The calendar and the clock afford the best symbols of time in this work. Early in their school life the children learn to cross off the days as they pass, and to attach the appropriate significance to *now* (the present day), *before* (all past time), and *by and by* (all future time). After a time they learn to narrow the *now* to a spot on the clock where the minute hand apparently lingers while they gaze. When New Year's Day comes they are shown several perfect calenders of past years—"Many, many befores," they usually dub them—in connection with the new calendar, so they realize that *now*—a minute in the first day of the new year—is a "small time" lying between a past of which they know something, and a future which will "come by and by."

Now, if the reader will remember that the children understand the meaning of every word in what is to follow except that the verbs call to their minds the root meaning only; that they have seen verb variations constantly, and so do not resent them as mis-spellings; and that they have

a sense of time as being divided into past, present, and future—in their nomenclature *before, now,* and *by and by;* if the reader will bear all this in mind, then a picture of an actual recent lesson will be fairly comprehensible.

[It should perhaps be explained that, in much of the teaching of the deaf in America, the present progressive is first taught as the present, and the habitual present reserved until a later stage.]

The Lesson.

Three spaces are ruled off on the blackboard dedicated respectively to *before, now,* and *by and by:*

before	*now*	*by and by*

and the sentences which follow are written, successively, in the appropriate space.

"I am standing up now."

"You are sitting down now."

"I am sitting down now."

"You are standing up now."

"We ate our breakfast this morning before."

"We ate our supper last night before."

"We shall eat our lunch at half-past eleven by and by."

"We are not eating now."

The children are required to assent to the truth of every proposition; if any doubt—and many do—they are convinced by all sorts of appeals to their memory.

Then all previous work is erased, the spacings are ruled anew, and some especially inviting candy is distributed. Each child holds his piece temptingly near his mouth, but—duly warned—refrains from beginning to eat.

"We shall eat some candy by and by."

All eyes glue themselves to the particular black mark on the clock which the teacher designates as the hither limit of *by and by;* and when the slow-moving hand reaches that mark—"We are eating the candy now," chorus the muffled voices dutifully, while the chalk tells the story also.

When the teacher has convinced herself, by an elaborate inspection of each little opened mouth, that the last scrap of candy has disappeared, she writes, "We ate some candy before," and the children confirm the tale orally, adding a sigh of satisfaction, and the explanatory remark, "finished!"

"Aneta will drink some water by and by."

Great excitement! This is not the time for drinking water. A wait, measured on the clock, and enlivened by much repetition of the prophecy and a good deal of emphatic and suggestive coupling of the word *will* with *by and by* on the teacher's part—Aneta in the meantime increasing her own importance by substituting "I shall," for "Aneta will."

When the farther limit of *now,* which is also the hither limit of *by and by,* arrives, Aneta, accompanied for purposes of observation by her classmates, hastens to the faucet, and, in accordance with preceding instructions, drinks sparingly but continuously; while the other children scurry back to say, and see on the blackboard, "Aneta is drinking some water now." The heroine of the moment then returns to her seat and, "Aneta drank some water before," is added to the accumulated statements.

In actual practice many such lessons precede any attempt at generalization; but for present purposes the stage which permits of generalization will be assumed to have been reached on the same day.

The blackboard now appears as below:

before	*now*	*by and by*
We ate some candy.	We are eating candy.	We shall eat some candy.
Aneta drank some water.	Aneta is drinking some water.	Aneta will drink some water.

The teacher makes arrows connecting the verb with the time phrase which gives it validity, and then crosses out the time phrase. Then she writes each sentence both ways: "We ate some candy before," and "We ate some candy." After a contemplative inspection of these two forms she appends to both the conventional sign of correctness, C, but indicates by her expression her own strong preference for the shorter form.

Next, working rapidly, she writes sentence after sentence in some one of the three tenses, taking care that each statement in past or present shall be true, and prefacing every future which admits of doubt by a politic "Perhaps." As she writes each sentence she puts the time phrase at the end; but just as she completes it she looks back at the form of the verb, expresses, by her looks, contrition for her lack of recollection, and hastily erases the unnecessary word or words.

All at once she erases everything, spacing lines and all, and begins again on a plain blackboard. This time she writes a statement in regard to the future—"Santa Claus will come"—and questions, "When?" "By and by." "Yes, but *why* by and by?" "December 25, 1908, by and by." Yes, but perhaps December 25, 1907, Santa Claus." Up jumps somebody and pounds a small emphatic fist on the word *will; "Seven: before,* no. *Will: by and by: eight,* yes."

That settles it! When *will* or *shall*—unaided by extraneous hint or suggestion—assures them that the future

must be indicated, the battle is won. Forever after they will know that the time secret lies hidden in the verb.

The lesson sketched above is the merest outline; but if it has shown the reader how the language which comes with such ease, by imitation, to hearing children, must be built up—thought by thought and word by word—for deaf children, then it has served its purpose.

MABEL ELLERY ADAMS,
Instructor in the Horace Mann School,
Boston, Massachusetts.

NATURE STUDY.

EVERY one should be a nature lover, and to some extent a nature student. A great many people would study and enjoy nature much more if they realized the value of such study. It *has* a value from several different standpoints.

Practical people should consider its economic value. From the beginning of the human race, there has existed a fight for the good and against the bad in nature. We should be enlightened concerning our natural surroundings, that we may not, through ignorance, aid the poisonous and undesirable, and thus work against the progress of the community. No one has a right to allow things to breed upon his premises that may cause damage to his neighbor. Flies, mosquitoes, ragweed, and numerous other obnoxious insects and weeds, are a constant menace to health and comfort, to the food supply, markets, and finances of the country. A single insect species has been known to cripple the fruit industry of the whole country, and another to destroy the entire wheat crop of a large section. Nature study should be encouraged, that every educated man and woman may intelligently foster the natural goods—pure air, pure water, forests, shrubs, flowers, game, fishes, song-birds, and many others, and help to exterminate the thorns, thistles, and evil parasites.

The ethical and social side of nature study is akin to the economic. In the period of childhood, when activity and capacity for interest are highest, we need ethical nature training. If the boys of a neighborhood rob the orchards and melon patches, a better remedy than the jail or the shot-gun might be to provide them with a fruit tree or two, and a melon patch of their own. Thus undesirable citizens, held in check only by the arm of the law, might be changed into desirable citizens, anxious to support the law, for as soon as a boy engages in the enterprise of producing something, he unconsciously but surely arrays himself on the side of law and order, because he wants protection for *his* property.

The æsthetic side of nature study is the one that is the most apparent, and often we make the mistake of thinking it the only side. And this is the side that must be *felt* rather than taught, or put into words. Children should be taught the *creative* side of beauty—to preserve and increase the natural beauties of the roadside, field, and forest, and to avoid the ruthless destruction that some misguided people imagine to be a love of nature. In cities where children are taught, in school, about the varieties and habits of the native birds, there is little complaint that boys rob birds' nests, and shoot song-birds. Preserving and protecting the good and beautiful fosters a love of goodness and beauty, whereas explaining and talking about beauty often detracts from its enjoyment and real appreciation.

Then there is the religious side of nature study. There is an old story, known perhaps to you all, that I venture to tell in this connection.

A man was once traveling through a wild, beautiful, lonely part of our western country, where he met an aged monk, alone and on foot. He entered into conversation with him, and expressed his surprise at seeing a man of his years there alone, whereupon the monk told him this

reason. He said that until he was seventy years old his life had been one of self-denial and hardship. He had devoted himself to prayer, fasting, and good deeds, believing these to be the highest duties of man. But he confessed that often his prayers were perfunctory and his good deeds mechanical. His sense of duty was strong, but his love of God and his fellow-man was weak.

When he was seventy years old, he had a severe illness, and while lying apparently at death's door, he had a vision of himself before the throne of God. Instead of being questioned as to his spiritual state, the Lord asked him at once how he had enjoyed the beautiful world. The monk replied that he had been so busy, he had taken no thought whether the world were beautiful or not. Then the Lord told him that He had made the earth beautiful for the enjoyment of His children, that through the enjoyment and study and love of the beauty of nature they might grow into a knowledge of the nature of Himself, the Creator, Who is All-Beauty and All-Love.

The vision then faded, and the monk, instead of dying, recovered from his illness. He immediately started to see as much of the beautiful world as he possibly could. For nearly ten years he had traveled, usually on foot, from one beautiful spot to another, and he said that his life was filled with a happiness, peace, kindly spirit toward others, reverence, and worship such as his former years had never brought him.

I believe it is true that few nature students are morally corrupt, and seldom irreverent. Some one has said that the undevout astronomer is mad, but whether we study the worlds in space through the telescope, or the minutest thorn on the stem of a rose through the microscope, we are filled with admiration, awe, and reverence for the wonders revealed to us, and intuitively we see the Creator in His creations, and look through nature up to nature's

God. If we can instil in the child a genuine love of nature, we lay the surest foundation for a religious character.

Again, there is the literary side of nature study. I mean that a knowledge of nature will interpret the countless references to its beauties with which our literature, especially poetry, is filled. For instance, each spring a quotation from Lowell's "Suthin' in the Pastoral Line," comes to my mind, but the couplet about the bloodroot was merely a pleasant rhyme until two or three years ago when I first saw the bloodroot. When I "oncurled" one of the leaves, and found a drop of dew within, it was like seeing a favorite picture in a frame that brought out all its beauty.

> I, country-born and bred, know where to find
> Some blooms that suit the season to the mind,
> And seem to match the doubtin' bluebird's note;
> Half-venturin' liverworts in furry coats,—
> Bloodroots, whose rolled-up leaves if you oncurl,
> Each on 'em's cradle to a baby pearl.
> But these are jest Spring's pickets—sure as sin
> The rebel frosts 'll try to drive 'em in,
> For half our May's so awfully like m'ain't,
> 'Twould rile a Shaker, er an 'everidge saint.
> Though I own up, I like our back'ard springs
> That kinder haggle with their greens and things,
> And when you've 'bout give up, without more words,
> Toss the fields full of flowers, leaves, and birds.

In fact, there is no getting around the teaching of nature to some extent, if one teaches reading at all. Our readers are full of poems on nature. Here is one that I found in one of the second readers in use in the Wisconsin School. It is a simple little thing, but notice how much nature teaching must be done before one of our pupils could read this intelligently.

SPRING.

> **The alder by the river**
> **Shakes out her powdery curls;**
> **The willow buds in silver**
> **For little boys and girls.**

The little birds fly over,
  And oh, how sweet they sing!
To tell the happy children
  That once again 'tis spring.

The gay, green grass comes creeping
  So soft beneath their feet;
The frogs begin to ripple
  A music clear and sweet.

And buttercups are coming,
  And scarlet columbine,
And in the sunny meadows
  The dandelions shine.

And just as many daisies
  As their soft hands can hold
The little ones may gather
  All fair in white and gold.

Here blows the warm, red clover,
  There peeps the violet blue;
O, happy little children!
  God made them all for you.

—*Celia Thaxter.*

Lastly, the strongest reason for nature study, and a summary of the others, is that it brings happiness. It is a pleasure that can hardly be carried to excess, so uplifting is it in its influence. It is restful and recuperative, and a sure cure for weary muscles and overstrung nerves. It is a pleasure that grows more fascinating as you indulge in it. The opportunity for nature study is ever present, for place and season need not necessarily be considered. It is equally adapted to the needs of children, young people and old people, deaf and hearing. Nature appeals to us through the senses of sight, feeling, and smell quite as often as through the ear. Even the exquisite notes of the song-birds are but a small part of the enjoyment of bird study, while flowers, trees, stones, stars, insects, and animals furnish a diversified field of the keenest interest where deafness is no handicap. Do we not owe it to these children, who find that deafness does and will handicap them in

many avenues of pleasure, to open their minds and hearts to the happiness that nature may bring to them?

The ideal way for the child to learn to love nature is identical with the ideal way of learning religion, and that is, at his mother's knee and at his father's side. But a great many children never learn much of either subject in an ideal way, and then, too, our children are separated from their parents. It then rests upon us, who, in a double sense, stand in the place of the parents, to supply every mental need of our pupil.

In the lower grades, nature study most naturally and easily forms a part of language work. A primary teacher, with no thought of definite nature study, approaches the little deaf child with objects and pictures of objects that are already known to him. He has seen and handled the cat and dog, and the teacher makes use of these sense impressions already acquired, to build up for him a vocabulary. The names of common animals, the parts of the body, numerous natural objects, a tree, a flower, a star, the sun, the moon, the grass, are among the first in the child's vocabulary. Little sentences are formed about these subjects, and we have "The flower is yellow," "Mabel loves the cat," "The bird has a nest in the tree," and so on.

In the second grade this is enlarged upon; descriptions of natural objects, of animals and birds, form part of their journal work. Questions about pictures call attention to all the natural objects shown. How many cows do you see? Where is the tree? What color is the flower? What is near the bush? and so on.

In the spring term I enjoy teaching them some of the common birds. It is a pleasure to see how naturally and eagerly they take this up. There is no effort to hold their attention; the effort is to get them to leave the subject at the proper time. I teach the names of but a few common birds, but they learn to describe them quite accurately,

so that often I can recognize, from their description, a bird whose name I have not taught them. I find that this quickens their powers of observation, and helps their descriptive powers in language.

When the children acquire a vocabulary of a few hundred words, the field for general instruction becomes so wide that the teacher is practically unlimited in her choice of subjects to present. It is here that nature study depends entirely on the teacher's interest in it, unless it forms a part of the course of study. Beyond occasional references, and the explanation of terms found in the reading lessons, it has little or no place in many school-rooms. I know by my own experience that a child with a natural love of nature may grow up with eyes unopened to the opportunities for study and enjoyment just at hand, for want of a little guidance. If would seem that a small amount of definite, connected work in nature study could be profitably introduced into our curriculum, perhaps not as a separate branch of study, but as a feature of language or reading.

More important, however, than a place for nature study on the curriculum, is nature study for teachers. Not that we should be expected to know and expound every fact in natural history, but that we should love and enjoy it, in order to teach our pupils to love and enjoy it. A perfunctory teaching of anything in nature, simply because the course of study demands it, is worse than useless. If we know more of nature ourselves, we shall be able to grasp many opportunities of presenting it to our pupils. We shall become better and stronger ourselves, and therefore better fitted to lead our pupils into the Beauty, Goodness and Strength which we crave for them.

I have quoted freely, in this article, from "Nature and Life," by Clifton F. Hodge.

FRANCES E. FOWLER,
Instructor in the Wisconsin School,
Delavan, Wisconsin.

THE THOUGHT AND LANGUAGE OF THE DEAF-MUTE. AN INQUIRY CONCERNING THE TRUE FOUNDATION OF DEAF-MUTE INSTRUCTION.*—II.

Chapter II.

The Connection Between Thinking and Speaking. (Nature of the True Idea.)

"The word is the light of the world."
—*L. Feuerbach.*

The ability to speak is inherent in mankind; the human being speaks because he thinks. He alone is able to distinguish and separate definite parts from the sensuous material which his perceptions offer, to combine them in an orderly manner, and to designate them verbally. By these activities the human soul demonstrates its power to form ideas; there is inherent in it a function of arranging the conceptions. This faculty places the human being far above the animal. The animal does not think and consequently does not talk.

But how does the human being acquire verbal signs?

The impressions made upon the memory from conscious perception are pictures, but they are, as I wish to emphasize here, not merely pictures of the thought content but also of our own process in the act of perception. The mind strives to seize the thought, and therefore strives for expression. This endeavor is from the very beginning linked to a strong motor tendency; that is, it seeks expression in synonymous physical movements. As in the act of perception our attention is already accompanied by physical movements, which in the conception are associated

*Continued from the *Annals* for November, 1908, page 492.

with pictures of the corresponding thought content, so the mind unconsciously grasps at these in order to obtain from them a verbal sign. In this manner the mind acquires gesture signs and under certain conditions a significant sign language is developed therefrom.

Where the perception occurs under strong emotional influences, this endeavor to find expression, linked with its motor tendencies, manifests itself in sounds unconsciously produced or imitated. These are readily comprehended by reason of their adaptation and naturalness, and the mind retains them as verbal signs. In the process of further development these inceptions lead to the development of a spoken language. Thus in the dawn of all mental and verbal development there are two significant signs, gesture and sound. The relationship between the sign language and verbal language does not concern us for the present; we only wish to see how the body becomes the willing tool of verbal representation and how important language, be it either verbal or sign language, is for the development of the mind. Without language signs the conception, the idea, could not be retained; as soon as produced, it would again disappear, being crowded out by other pictures, and man would be powerless in the presence of passing events; he would remain a slave to his senses. With the verbal sign, the human being raises himself above the thought content, in so far as he becomes master of it and by its means puts his thought in action. "When once in action, thought was able to help itself further, and now language was transformed and enriched by thought." Consequently thought and language exert the closest reciprocal action imaginable. Where the mind is active, there speech also is developed. There is no thought without language; that is, language understood in its fullest meaning. As thinking and speaking are always united in fact, they must also always be considered together logically. To

develop the thought of a person means nothing else than to develop and enrich his language, and whoever cultivates his language cultivates his whole being.

Only by creating a language is the human mind able to communicate its conceptions and emotions, the contents of its thought. Without this impulse of communication one cannot conceive of the mental development of the individual. Where it is suppressed by inner or outer causes, mental development will stagnate to a greater or less degree. The impulse to verbal expression clearly demonstrates that man is a "social" being, dependent upon intercourse with his kind, and developing his whole nature only by mental association with his fellow-man.

But mental communication is possible only when human individuals understand each other. The first requisite of understanding is, as Swoboda says, "that one must be in the same psychical situation as that in which the thing to be understood was spoken, written, or acted." Only on this basis can one understand what is meant. If I wish to explain something to a person, I must be sufficiently practiced in the art of communication to be familiar with it. "The art of communication is based on the ability to inform the interlocutor's mind what the communication is about." If I wish to understand some one, I must place myself in his train of thoughts and emotions and must myself experience these thoughts and emotions.

"Emotions can be understood only when one has had them." Every emotion is originally connected with some gestural movement, and as soon as this has come to my consciousness, I can guess the emotion or can with its aid reproduce the emotion. The conception of the movement, and still more the execution of the movement itself, arouses the emotion within me. I understand the other person and knows how he feels, if I can read his countenance and imitate him, so that I am able, for instance, to rejoice with him, or to share in his sorrow.

In natural speech we accompany the representative signs of language with such expressive gestures that the person spoken to can without great effort place himself in our emotions and in that way much more readily comprehend the connection of thought. Of course one who in communicating a joyful occurrence looks unconcerned, or even like one giving an invitation to a funeral, is hard to understand and still harder to comprehend.* Writing, indeed, gives us only words and we must by means of these pass through the emotions of others. This is possible only when we know how to experience the emotions within ourselves. Besides the word, there must be a picture of a corresponding pantomimic movement or physical attitude which enables us to understand the word. We observe a movement only when we seek to perform it or reproduce it. We therefore *sign* the chain of emotions in brief strokes, and thus the emotion is first clearly aroused in our consciousness. We understand emotions by the imitative reproduction of the corresponding pantomimic movement, gesture, or physical attitude.

As we see, we have gotten into the sign language and know not how. Indeed, the "psychology of the understanding" unconsciously leads us to the sign language and teaches us rightly to comprehend its meaning and nature. On the basis of this psychology one recognizes how naturally this language adapts itself to the process

*Many teachers of the deaf, notwithstanding the change of emotions which their train of thought brings with it, cannot easily lay aside their solemn, professional mien. Here and there it is even thought that one must not suggest or betray the chain of thought even by facial expression, in order not to impair the art of lip-reading. On the other hand we are told to emphasize speech with "gestures and action." But how can one approve and recommend expression by means of gestures and action, and hate all other signs? "Explain to me, Count Orindur!"

of understanding, so that we may say, in regard to the world of emotions at least: "all understanding is an understanding through signs."

Now the point in question is, as before stated, how to understand conceptions and ideas that are communicated. I can understand the thought content of a representation in signs only when I approach the things presented in the same way as the person who desires to communicate them to me; or, to express it more generally, when I comprehend the reality in the same normal manner, so that in every case there occurs in me a similar unity of conceptions as in my fellow-man. What we understand in a normal manner is impressed upon our ideas. Not without purpose was it stated and especially emphasized in the Introduction, that only through a comprehension of the process and nature of thought can we recognize the true connection between the thought and language of the deaf-mute. In our investigation we must therefore first more closely observe this thought process, and see what is meant by the "idea," for all our thinking is a forming and transforming of ideas. Whoever desires to understand me must enter into my ideas; he must reproduce in his thoughts what I have thought before.

The scholastic doctrine of thought has controlled pedagogy almost exclusively until the present day. There need therefore be no surprise if its influence has made itself felt in the education of the deaf. Even the question whether or not the deaf-mute was capable of receiving instruction was made to hinge on the question whether or not the deaf-mute was able to form ideas. The great philosopher of Königsberg in his "Anthropology" credited the deaf-mute with an "analogy of reason," and A. Eschke, as is known, thought it would not require much effort to demonstrate that the deaf-mute had no common sense.*

*See A. Eschke, "*Ueber Stumme*," Berlin, 1791, p. 231.

Although later a more favorable opinion regarding the ability to teach the deaf prevailed, one seldom obtained a clear insight into their mode of thought. The uncertainty regarding the relation of the word to the idea formed a permanent obstacle to this achievement. The medieval opinion that word and idea are coincident, that the word strikes and expresses the nature of things, clung to their minds.* Only such ideas as could be correctly defined were regarded as true ideas. Whoever could not express his ideas in language according to the established rules of logic was pronounced feeble-minded.

From this point of view, it was an easy matter to declare the deaf-mute irrational and mentally abnormal, and to criticize his thought and language as defective. We wish

*As an example of this I will quote Pestalozzi from the number of pedagogues. Though he regarded intuition as the "absolute basis of all knowledge," he overestimated the importance of the *word*. Beside number and form he placed the name and regarded it as one of the three "elements of our knowledge," as one of the "common properties" of things. He also believed that "by means of a well arranged and thoroughly memorized nomenclature a general foundation for all kinds of knowledge may be laid." He further inclined to the opinion that the word has an inner relationship with the impression which the thing creates in us. So he said of language, "It is in a real sense a return of all impressions which nature in its whole extent has made upon our race; I use it as such and seek by the thread of its spoken sounds to create in the child the same impressions which these sounds have formed and caused in the human race. (From "*Wie Gertrud ihre Kinder lehrt.*")

It is true that in antiquity the Stoa had set up the doctrine "that in the origin of our language sound has been a conscious imitation of the properties of things." See Prof. P. Barth, "*Die Elemente der Erziehungs- und Unterrichtslehre,*" Leipzig, 1906, p. 107.

The extreme "nominalism," as is known, declared all ideas as "flatus vocis," air movements caused by the voice. A kind of nominalism was also represented by John Conrad Amman, the author of "Surdus Loquens" (Amsterdam, 1692), who also thought that "language is the representation of thoughts which the articulated words have left in us."

to obtain another point of view and this in our opinion is only possible by striving to conceive the nature of the idea in a different way from the usual one.

When Goethe says "Let no one believe that he can overcome the first impressions of youth," he expresses a truth which can be applied to all learning, to our whole intellectual development. That "we are children of our time" is as true of the teacher as it is of all other persons. If we look into the pedagogical text-books we notice the reoccurrence with slight variation of one and the same definition of the idea. I will here quote only such as I studied while preparing for my profession and which have, in the past fifteen years of my vocation as teacher of the deaf, served me as authorities. The late Mr. Beckh, Superintendent of Public Instruction of Würtemberg, in his text-book "*Evangelische Volksschulkunde*" makes this statement regarding the idea: "By an idea we understand nothing else than the combination of an entire series or group of individual things according to their common characteristics in a uniform verbal expression." Of the content of an idea he says: "The content of an idea is the sum of the characteristics which constitute its nature." And regarding its extent he says: "By the extent of ideas we understand the sum of individual things, which are included under a common idea and therefore share its characteristics.*

The definition of the nature of an idea, its content and extent, in the manner stated, conforms wholly with traditional logic. The "verbal expression," that is, the word, is regarded as the essential part of the idea. To the word is attributed the power to create "unity." But one might here ask: How is all this done? How does the mind accomplish a "combination," or, better expressed, an arrange-

*See H. Beckh, "*Lehrbuch der evangelischen Volksschulkunde*," Stuttgart, 1885, pages 48, 149.

ment of its conceptions in higher units, and what are really the functions of the word? Metaphysical reflections are of no aid here in obtaining an understanding. Modern science has therefore abandoned the scholastic point of view even in the doctrine of ideas, and shown psychology and logic new paths. The doctrine of the idea is unquestionably the most difficult chapter of our whole psychology and logic. We pedagogues must gratefully accept what the masters of science offer us. But a simple acceptance is insufficient. We must study their words, we must strive to "understand" them. The work with children who lack one or more senses especially requires a deep interest in psychological questions; whoever studies the occurrences of intellectual life superficially, and without examination accepts what others have told from their so-called experience, will cling to prejudices from which he may never be able to free himself. If it be desired that every teacher should be an efficient psychologist, then this demand is doubly justified with us teachers of the deaf. Whoever studies scientific psychology and at the same time constantly keeps his eye on his vocation, gains the ability to free himself from deep-rooted prejudices, old views and opinions, and learns to view the phenomena of teaching and learning in a new light. Unfortunately only few attain this ability; the majority tenaciously cling to custom.

In a paper read at the Seventh Congress of German Teachers of the Deaf at Königsberg on the question, "How can we get the deaf to speak?" I made the statement that, in all the mental activities of the child, incidents will occur which are actually nothing else than "life processes." I followed out this thought and found that the "doctrine of the idea" offers the basis from which the problem of deaf-mute instruction must proceed and upon which the method of instruction must be based. I then sat at the feet of a philosopher who may justly be named a "master

of the idea." I refer to Dr. Baron Cay von Brockdorff, Docent of Philosophy in Brunswick,* a man who has done much for the scientific development of the teachers of Northwest Germany. In the *Blätter für Taubstummenbildung*, 1907, No. 6, I published a "pedagogical scientific study" on "perception and idea" which was intended to offer a new view of the idea, and which I hope has here and there also prepared the way for the understanding of the present treatise.

We may approach the doctrine of ideas from two sides. We may proceed from the question: How do we arrive at ideas? and we shall then by preference proceed inductively; or we may ask: What is an idea? and observe what position and meaning it occupies in our thoughts. In either case we can investigate how our thoughts move only so far as concerns perceptive recognition. In the first case we proceed from the details to unity, in the second case we take the opposite direction. As pedagogues we naturally prefer the former method. It has, however, the disadvantage that in this process one generally construes only an ideal course from the perception to the idea; often very little is gained for the comprehension of perceptive thought. We will therefore take the other course and proceed from the idea to the perception; we shall certainly reach the goal in this way also.

We observe at the outset that we can admit no fundamental opposition between perception and idea; formerly, as is known, they were sharply distinguished. In perceiving and understanding we deal with the same thing,

*His most noteworthy works are: "*Die Organisation wissenschaftlicher Vorlesungen für Volksschullehrer,*" Brunswick, 1904. "*Die philosophischen Anfangsgründe der Psychologie,*" Hildesheim, 1905. "*Die Geschichte der Philosophie und das Problem ihrer Begreiflichkeit.*" *Zweite vermehrte Auflage,* Osterwieck, Harz, 1908, A. W. Zickfeldt. "*Die wissenschaftliche Selbsterkenntniss,*" Brunswick, 1908, E. A. Appelhans.

the same mental process. If we proceed from the perception, we consciously lead our thought from single certainties to unity; if we start from the idea we have the opposite road before us. But we must constantly remember that in the perception of the most elementary unit and the most significant reality we must comprehend something in order to gain knowledge, and that in the simplest as well as the highest idea a regular sequence of pictures must occur in our consciousness if the idea is to be understood. In other words: "The idea is perceived and the perception is comprehended." We may therefore rightly say: Perception is comprehending and comprehending is perception. Between the two there exists no "difference in class" but only a "difference in direction."* "The perception is permeated with ideas; in perceiving and comprehending we constantly pass through opposite yet connected movements." We cannot separate perception and comprehension: we can only distinguish them apart in order to gain an outlet and aim for our manner of reflection, in order to become clear concerning ourselves, that is, concerning our thinking. The perception, therefore, simply remains the perception, but it is also always an idea, since it never appears in our knowledge other than a "regularly ordered unity of relations."†

All psychology is in the last analysis self-observation (introspection). One must use it as a support if one desires to ascertain the truth of psychological doctrines. Still we would not underestimate the value of scientific psychological experiment. With experiment one only strives to confirm and comprehend what one observes

*See my article on "*Anschauung und Begriff*" in *Blätter für Taubstummenbildung,*" 1907, No. 6.

†If in theory there exists no opposition between perception and understanding, then it cannot be maintained in practice. It was therefore a mistake to introduce a special "instruction in ideas" into the teaching of the deaf. It really led to nothing but a rather barren intellectualism.

in one's own intellectual life. In the following investigation we shall attempt to become conversant with the nature of comprehension, by again passing through our own psychical experience.*

If I have at my command a certain idea and with it am able to work in the most diverse thought connections, I may ask myself: Why do you comprehend so rapidly what is meant by the sign of the idea? What occurs in you when you hear or see the expression of this idea? The word *Tree*, for instance, is spoken to me and in the same moment I am able to assert that I understood what was said. But what did I immediately think of at the word *Tree?* I can hardly say myself. Perhaps there arose in me a schematic outline of a tree, a phantasm, while my eyes tried to reproduce the picture and I had the sensation: that is about what the thing spoken of looks like in reality. But I could hardly have thought further than of "something high." But even this thought did not come to my consciousness without some expression of movement. Unconsciously I had to raise my eyes or move my head a little. It is true the movement need not always be produced; the slightest inception, the so-called innervation and its sensations suffice to produce an outer fulcrum which renders comprehension possible. Do we not here again see a verification of the statement: "All comprehension is a com-

*I wish to call attention to the fact that in the description of psychical occurrences we can express ourselves only in pictures. This renders exceedingly difficult the verbal description of the psychological process, as well as its comprehension on the part of the reader. The psychical in our consciousness has only a succession, not a juxtaposition; "the psychical lies only in time." We must therefore use pictures and compare the occurrences in our mind with outward actions. We speak of conceiving and conceptions, of their combination and connection, of the comprehension, of the forming, separating, and relating of ideas, etc. We act as if we could handle the contents of the mind like tangible, circumscribed things, as if we could separate what is indivisibly connected.

prehension through signs?" Surely. Through the word alone comprehension is not possible; it only introduces the act. Now since it is possible by means of thoroughly drilled word and thought connections to operate so rapidly, one overlooks the nucleus of the comprehension, that is, the sign, and with it the physical and pantomimic movements which constantly accompany and always aid thought. One regards the outer motive for the inner incentive and attributes to the word sovereign power over the thought. We will return to this point later but it is well for us to utilize every opportunity gradually to throw the necessary light on the question.

To "penetrate" an idea, we must proceed to the point where the conceptions which constitute the content of the idea enter the field of vision of the consciousness. I can "think out" the idea only when I place its parts in a picture before my mind. If I concentrate my attention upon an idea, it will pass back and forth between the perceptive symbols of the parts of the idea. I inform myself regarding its contents, I "draw" one after the other into the light of consciousness, and establish relations which cause the whole to appear as an established unity. All thinking is an entering into relations, and "entering into relations is orientation, therefore movement."

Tree!—Now, thought, go thy way! A picture must appear to me. Ah!—I already see it coming. There it is. A schematic outline, as I draw it on the slate for the pupils if I wish to tell them what a tree is, stands before my eye. It is a picture of trunk and crown, with which one can think of many things. If I were yet a child, I should likely think of grandfather's pear-tree with the sweet and early pears, or of the apple-tree in the corner of the garden, or of the great linden-tree on the village commons; a host of conceptions and the emotions connected therewith, in short, a throng of experiences would pass through my mind, but I should

certainly bother myself little about the logical idea. Still it is certain that as a child I readily understood what a tree was, for "whatever is to be comprehended is most easily comprehended through experiences."

But to-day I am a pedagogue and, besides, a bit of a psychologist. As such I regard the matter differently and I ask myself: How does it come that on the basis of the word heard or the writing seen a picture is placed before the eye, which represents a number of relations in the idea and makes the idea plain and comprehension possible? The layman says: That just happens so; one knows the word. The pedagogue thinks: The word is so associated with the thing that the one reproduces the other. The teacher of the deaf explains: Although the word—the sound heard or the written character seen—has nothing "in common" with the thing, yet it is better able than anything else to designate the thing if it is "directly" associated with it. All very good and fine, but very little is explained by it.

It may be regarded as certain that the word Tree itself has nothing to do with the picture seen in reality or conceived in the mind. But one must correctly understand this "nothing." If we take the word as a sign, it necessarily belongs to the thought process, for without signs no conception can be grasped. If no other sign is at my command, the word Tree must unlock the thought process and again introduce it. What must be noticed, however, is this, that my word through its mechanism of movement or acoustic effect gives no lines of direction or suggestion which without further help could tell me what relations are intended in the given case.* The word Tree does not tell me that I must reproduce a trunk with a crown growing

*The imitative, onomatopoetic words, as is known, form an exception. They contain a part of the content of observation, and therefore through their sound effect refer directly to the conception. The remaining parts, however, must be reconstructed, as is the case with all other ideas, by bodily movements other than the vocal movements.

out of the ground, in order to be conscious and certain of the fact that my thought is in the right field and moving in the direction desired by those speaking or writing. This is decidedly of no advantage to the process of understanding, but a great disadvantage. The speaker therefore seeks by means of all kinds of movements, pantomime, gestures, and signs, to draw one who he believes has not understood him into his own direction of thought, to facilitate and expedite his comprehension. If I have no speaking person before me, but merely the dead writing, then only the close connection of the word with the so-called "thing," that is, with the thought-process conforming to the reality, aids me. Such a safe functionary connection is attained only when the necessary thought occurrences afford the individual a large measure of "knowledge satisfaction" and later by hundredfold repetition have acquired such brevity and condensation that the contact between the recognized word and the thought can be produced with lightning-like rapidity.

If I now recur to the word Tree and it offers, as already seen, a picture of a trunk and crown before my mind, I must ask myself further: How has this picture been produced? Something must have passed within me that cannot wholly escape attention.

It would be entirely wrong for us to assume that in our brain there uniformly lies drawn a picture of the tree, something like the picture on a photographic plate. This rough conception of the function of thought is untenable; still it constantly haunts many heads and books which have not yet overcome materialism.* "Everything that be-

*As we shall see below, the methodizers of deaf-mute instruction base their opinion of the sign-language upon this view, since they believe that in the mind of the deaf-mute real things reflect themselves "true to nature," that he cannot work out anything, therefore cannot comprehend anything, by thinking. But we on the other hand maintain this: Perception is comprehension; in every observation the mind compares, distinguishes, draws its conclusions, that is, thinks.

longs to our soul life and is psychical occurrence, lies in time," and only in time.

There can never be any such thing as a space picture in the mind. If a picture occurs through the activity of the mind, it always lies in the outer world, that is, in the three dimensions; only in that manner does it assume space and become conceivable.* Thus we come to a new and highly important question. We must try to gain a clear understanding of how it is possible for us to form a space picture of, that is, to project in space, an idea which contains only something psychical. We must seek a third thing which shall assume the part of intermediary between the psychological of the idea and the physiological that serves as the representation of the picture. Representation is always movement, a measuring and traversing of space. The space we "experience" only by our own physical movements, and it is these that produce a picture of what was thought in the idea. But if the psychical can act only on the psychical, there is still the question how the movements are produced, for what has the idea content to do with physical movements? As already emphasized in the beginning of this chapter, conceptions of things understood are always connected with pictures of our own experiences, our physical conduct and deportment, in short, our whole outer activity in the act of observing, so connected or rather mingled and interwoven that they cannot be separated from one another. As soon, therefore, as we wish to comprehend and reconstruct an idea, these kinesthetic conceptions appear and simultaneously cause the

*The more acute thinker will surely and with right here ask: How do we then conceive time? In no other way than in the picture of a straight line. Does not the deaf-mute also express "much time" by making the sign for "long" in space, measuring the length of the extended left arm with his right hand? Past and future also can only be thought of under the symbols of a straight line directed forward or backward.

corresponding movements which we have already performed in the perception.

Now enough of the theory; let us have some practical example. We are to reconstruct the picture of the idea "Tree." Unconsciously my eye is raised and follows the outline of a trunk and crown, just as if there were in reality a tree before it. That there occurs a change of movement in the passing from the trunk to the crown is plainly noticeable. The mind comprehends through this motion and change of direction the relations of space between above and below and the act of the judgment: the trunk is below, the crown is above. It observes mathematical space relations; for instance, the trunk rises straight upwards, taken corporeally it is a cylinder; the crown is vaulted in the form of an arch, like a dome. Of course these conclusions were originally gained by the real perception, but with the construction of the picture they are again thought out on the basis of the recognition of the idea, at least in their inception.

On the basis of the idea "Tree" I am therefore able to construct a picture, which in its parts, the trunk and the crown, represents the content of what was thought in the idea. But in the picture we only have a placing together in space of the parts of the idea, and in the act of thinking their consecutive occurrence. We still have no explanation why trunk and crown in our thoughts form such a unity, which operates as a rule, as a law. In the idea we have more than in the picture; there we must necessarily unite the parts in our thoughts; their regular relation alone guarantees safety, firmness, and consciousness of purpose to the thought. A logical unity must conform with the space connection in the picture; with it we first strike the nature of the idea.

In perceiving the reality, trunk and crown, on the basis of the mental action of observation, appear as separate certainties. But if perception is at the same time compre-

hension, they must form a unity in thought; they must be related to one another with the consciousness that they necessarily belong together, since the whole is to serve a definite purpose. Thought presupposes purpose; otherwise we should make no progress in our knowledge. We everywhere ask: What is the purpose of this or that? How does the one thing act on the other, purposely or not? Where anything exists, we ask the cause and purpose of its existence. Where anything occurs we think of the cause of its occurrence and we look for a result which we judge according to its fulfilment of its purpose. As Aristotle said, "The purpose is the essence of things."*

I see trunk and crown, the vigorous trunk below, the mighty outspreading crown above; my thought strives further, and I judge that the trunk must bear the crown in order that the purpose of the whole may be realized. By this correlation unity is produced in the thinking of the parts of the idea. Now we can say: The idea is nothing else than "the regular thinking of the connection of units." For the psychological course of thinking, the idea is a law by which we bring to consciousness our knowledge arranged in units; it is "the law of unity" in our conceptions.

Since the idea acts as a law—and it does this because it is produced on the basis of the laws of thought—it is of eminent importance for the development of the mind. Consider how our memory would be taxed if it had to retain the parts of ideas only on the basis of their being placed together in space or in consecutive order; in that case we could not get along for a moment without the sensuous perception. Into all our perception we convey the principles of our thinking; all perceptions contain "relations of space or time, or relations of space and time;"

*This evidently does not explain how the psychical acts on the physical, for that is something we do not understand; it is merely a statement of the regular connection between the occurrences of the consciousness and outer occurrences.

we comprehend nothing without recognizing how one part acts upon the other, how one depends upon the other, how one serves the other. The unity which rules in the idea enables us at any time to orientate ourselves in the reality through the perception; in it we have a means by which conceptions can always be regularly reconstructed.

Another thing we do not wish to pass by, since only through its recognition does the statement that all comprehension occurs in pictures acquire a universal character. Not only does the thinking of individual parts of ideas arise in occurrences in which we see the pictures produced; nay, the combination of ideas also, the thinking of the purpose, must conform to some picture, must be based upon some perception. The purpose, it is true, does not lie in the things themselves; of itself it is imperceptible; but in the act of thinking it is a picture and must be conceived in a picture. Every relation, be it ever so abstract, has an objective basis; it is "originally itself an expression for a perception."

If we regard trunk and crown from the view-point of their purpose and say "The trunk is to bear the crown," it is at once evident that we here produce a picture before the eyes. This is clearly shown by the word "bear." But where pictures are constructed our body acts and by its movements we become conscious of our mental movements. We assign its task to the trunk; unconsciously we move our hand, as much as to say: You must do this and that; that is your task. As soon as we try to explain what the word "bear" has to express we resort to the action, to the sign-language. We act as though we wished really to seize the trunk in order to make it bear the crown.

MATTHIAS SCHNEIDER,
Instructor in the Brunswick School,
Brunswick, Germany.

[TO BE CONTINUED.]

SCHOOL ITEMS.

Anerly (London, England) Residential School.—Mr. A. F. Boyer, formerly of the Margate and Manchester Schools, has been appointed Headmaster in the place of Mr. J. O. White, who resigned to become Headmaster of the Margate School.

Arkansas Institute.—Mrs. Belle C. Riggle, a teacher for the past sixteen years, died February 2, 1909, of pneumonia, aged thirty-five. She was a graduate of this Institute, "a woman of strong character and great refinement, careful and thorough as a teacher."

Baroda (India) School.—We are informed by Mr. P. R. Nandurbarker of Najar Paga, Baroda, India, that a school for the deaf will soon be opened at that place.

Colorado School.—The Colorado School has long been regarded as an educational institution, but an attempt has recently been made by the State Civil Service Commission to have it classed as a charitable institution. In consequence the following bill, which we sincerely hope will pass, has been introduced into the General Assembly:

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. That the Colorado School for the Deaf and the Blind located at the City of Colorado Springs, in the county of El Paso, is hereby declared to be one of the *Educational Institutions* of the State of Colorado and has for its object the education of such of the children of the State as can not, by reason of the impairment of their sense of hearing or of sight, be advantageously educated in the other schools or educational institutions of the State. Said School shall not be regarded or classed as a reformatory or charitable institution.

SECTION 2. In the opinion of the General Assembly an emergency exists; therefore, this act shall take effect and be in force from and after its passage.

A law similar to the above was passed by the Congress of the United States several years ago with respect to the Columbia Institution. "And said Institution shall not be

regarded nor classified as an institution of charity," the law says.

Donaldson's Hospital (Edinburgh, Scotland) Institution.—Mr. William Young, a teacher in the Institution, has been appointed Headmaster in the place of Mr. John Brown, who resigned to become Headmaster of the Institution at Birmingham, England.

Idaho School.—The building occupied by the School was destroyed by fire, December 4, 1908, but there was no loss of life or personal injury; other quarters were quickly provided, and the work of the School went on with little interruption.

Institution for Improved Instruction.—We are glad to learn that the Institution will not be transferred to the city of New York for day-school purposes as has been reported. The Council of Jewish Communal Institutions will hereafter control it, assuming its liabilities, reorganizing the Board of Trustees, and continuing the work in substantially its present form.

Mr. Timothy F. Driscoll, for a number of years pupil, supervisor, and teacher in this Institution, died in the Hahnemann Hospital, January 5, 1909, after an operation. "Mr. Driscoll was greatly respected by all for his earnest support of everything pertaining to the welfare of the deaf. His pupils loved him, and his influence for good among them, both in and out of school, made his memory dear."

Miss Margaret H. Jenkins, trained in the Pennsylvania Home for Teaching Speech, and recently a teacher in the Northern New York Institution, has been appointed a teacher.

The cooking classes, discontinued last spring for the lack of funds, have been placed in operation again under Miss Louise Nesbitt, the former teacher. The salary was raised by subscription.

Iowa School.—Mr. J. Schuyler Long, Head Teacher in this School, has published a volume of verse entitled, "Out of the Silence" (Council Bluffs, Iowa, 1909, 12 mo., pp. 137). Some of the verses have already appeared in the *Annals*

and the newspapers of the deaf, but their wide range and variety as here collected are a surprise. Mr. Long adds to natural poetic gifts a sense of rhyme and rhythm that is quite remarkable in one to whom for many years sound has been only a memory. The book may be obtained of the author; price, $1.25 postpaid.

Michigan School.—Mr. Egbert Langdon Bangs, formerly Principal of this School, died at his home in Flint, Michigan, January 27, 1909, of pneumonia, aged seventy-nine. Mr. Bangs was a native of New York State, was a graduate of Hamilton College, and taught in the New York Institution, first at Fiftieth Street and afterwards at Washington Heights, from 1854 to 1864. From 1864 to 1876 he was Principal of the Michigan School. Under his administration the name of the School was changed from Asylum to Institution, the industrial department was organized, and articulation teaching was introduced. After retiring from the work he practised law successfully in Flint and contributed frequently to magazines and newspapers. He was one of the founders of the Congregational church in that city and for many years a member of its board of trustees. His only son, Mr. Dwight F. Bangs, is Superintendent of the North Dakota School.

Manila School.—The statistical returns of the School at Manila, P. I., did not reach us in time for the January *Annals*. There were twenty-two pupils during the last year; seventeen were present November 10, 1908, eight of whom were taught orally. The School is progressing satisfactorily. Since last July Miss Rice has had as assistant teacher in training Miss Francisca Lagman, a bright, sympathetic native girl. A brother of Miss Lagman, who is blind and has taught in the district schools for several years, is also studying with Miss Rice. She hopes he may be able to spend a year in some school for the blind in the United States and so become fitted to teach blind children in the Philippines.

Mississippi Institution.—Mr. Edward M. Rowse, B. A.,

a graduate of Gallaudet College in 1906, has been added to the corps of teachers.

Portland (Oregon) School.—A day-school has been opened in Portland, Oregon. It is taught by Mrs. Florence Metcalf.

Utah School.—Mr. Driggs and his teachers are all members of the State Teacher's Association and, so far as possible, attend and take an active part in its meetings. Mr. Driggs has been elected President of the Association for the year 1909.

MISCELLANEOUS.

Summer Meetings.—The meeting of the American Association to Promote the Teaching of Speech to the Deaf will be held at Chicago, Illinois, June 26 to July 2, 1909.

The meeting of the National Educational Association will be held at Denver, Colorado, July 5 to 9, 1909.

"Defectives."—At a meeting of the Executive of the British National Association of the Teachers of the Deaf held on the 12th of December last, the following very proper resolutions, proposed by Mr. F. G. Barnes, were unanimously adopted.

"(*a*)—That this Executive views with regret the action of the Education Committee of the London County Council in classing all the deaf children under their jurisdiction as 'defectives,' this term being so generally associated with mental deficiency, that in the opinion of the general public such a classification is likely to prejudice the claims of the deaf, many of whom possess intelligence of a high order.

"(*b*)—This Executive further regrets the grouping of the Deaf Schools in the Metropolis with the Industrial School Branch of the Educational administration, there being nothing in common between an afflicted class needing special and sympathetic treatment, and a class of hearing children requiring corrective influence."

Long Terms of Service.—Three instructors of the deaf in England, who retired from the work last year, Dr. Richard Elliott and Mr. J. P. Barrett, of Margate, and Mr. Edward Townsend, of Birmingham, have had an aggregate term

of service of more than a hundred and fifty years. Mr. William Sleight, Headmaster of the Brighton School, still remains in the work after a period of uninterrupted service of sixty-seven years.

"*The Deaf Taught to Hear.*"—Mr. Charles M. Barrows, whose claim that he can teach the deaf to hear through "psychical suggestion" was mentioned in the *Annals* for May, 1908 (page 272), has opened a free school for deaf children at 1121 Nelson Avenue, corner 166th Street, New York City.

The Silent Success.—This newspaper for the deaf, the publication of which was begun as a monthly a year ago at Graham, Missouri, by Mr. O. M. Elliott, has been purchased by a company of deaf men in St. Louis and is now published as a weekly in that city. It is edited by Mr. Arthur O. Steidemann, a graduate of Gallaudet College, and is much improved in all respects. The address is 4110 North Eleventh Street, St. Louis, Missouri, and the price $1.00 a year.

Publications Received.—We have received the following Reports of Schools published in 1908, in addition to those previously mentioned: California (Twenty-eighth Annual); Institution for Improved Instruction (Forty-first Annual); Kansas (Sixteenth Biennial); Minnesota (Fifteenth Biennial); Northern New York (Twenty-third Annual); Rotterdam, Netherlands (for 1907–1908); Texas Colored (Twenty-first Annual); Western Pennsylvania (for 1907–1908); Vänersborg Blind-Deaf (for 1907–1908). Also the following other publications: School Guide of the Nebraska School for 1908–1909; Index of the periodical *L'Educazione dei Sordomuti;* "Saggio di un programma didattico minimo per gli istituti dei sordomuti" by A. Hecker (Milano, 1907, 8 vo, pp. 52).

ADVERTISEMENTS.

Bureau of Information.

The Convention of American Instructors of the Deaf maintains a free Bureau of Information for the use of superintendents and principals seeking the services of teachers and officers, and for teachers, matrons, and supervisors desiring positions.

The Bureau keeps on file the names of all applicants for positions in schools for the deaf, together with information as to length of service, work desired, salary expected, etc. It endeavors to give prompt and accurate replies to all requests for information.

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PERCIVAL HALL, *Secretary*,
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